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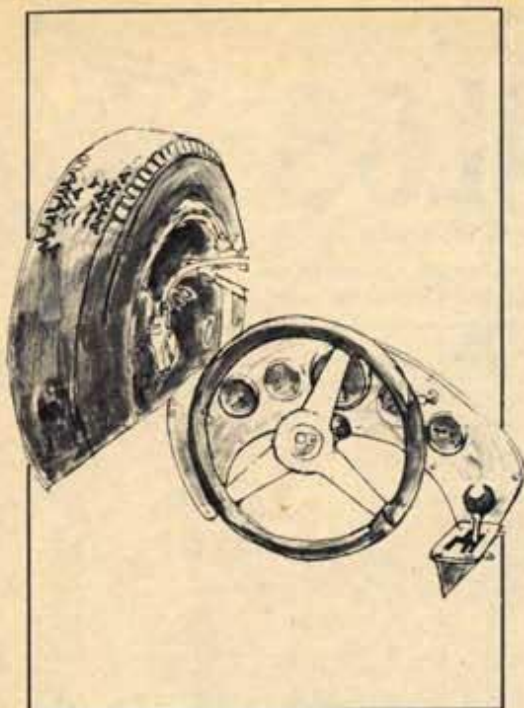
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MODEL CAR & SCIENCE

Volume 6, Number 5

May, 1968

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ON THE COVER — Bob Schleicher captured his beautiful MK IV Ford at speed on his home track. The '33 Willys was shot by Don Emmons, and you'll find a complete article by ol' "Don The Modeler" inside.

MODEL CAR & SCIENCE is published monthly by Delta Magazines, Inc. Executive Offices and Subscriptions, 131 Barrington Place, West Los Angeles, California 90049. Telephone GRanite 6-2821. Single copy price: 50 cents. Second class postage paid at Sparta, Illinois. Subscription rate: 12 issues for \$5.00, U.S. and possessions. 12 issues for \$6.00, all foreign countries and Canada. All editorial contributions and advertising inquiries should be addressed to Editor, MODEL CAR & SCIENCE, 131 Barrington Place, West Los Angeles, California 90049. Unsolicited contributions should be accompanied by return postage and Delta Magazines, Inc. assumes no responsibility for loss or damage to such unsolicited material. Printed in U.S.A. Copyright 1968 by Delta Magazines, Inc.

Now there's four new way-way-out Monogram custom show car models with great gobs of exciting fun!

CONTINUING 1/24 SCALE

Garbage Truck

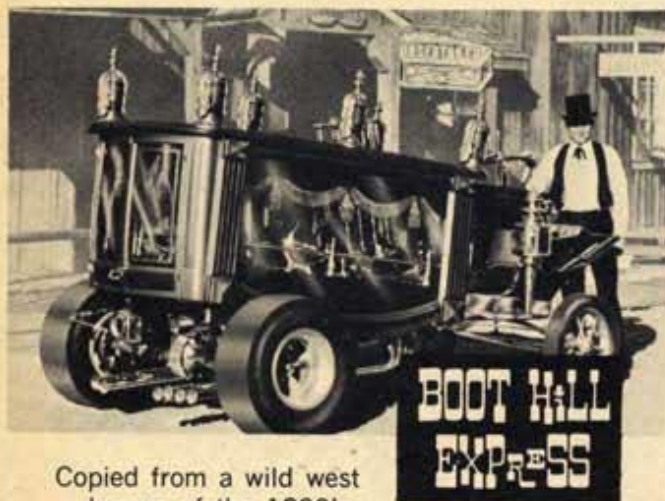


Copy of the familiar packer-type garbage hauler—a beach buggy too and a showtime stage with mod musicians. Four surfboards on racks and scuba diving gear. Garbage can gas tanks. Lots of chrome. Kit PC206. \$2.00.

Red Baron



Tom Daniel original. Top is giant surfer helmet. Mercedes-Benz aircraft engine. Stylized "T" body with canteen gas tank and Spandau machine guns. Deep dish Mag wheels and giant smokers on rear. Kit PC205. \$1.70.



Copied from a wild west hearse of the 1800's. Injected Hemi inside, with stacks protruding thru roof. Mag wheels and slicks. Clear windows on all sides. "Bone Ranger" skeleton with ten-gallon hat and six-gun included in kit. Kit PC188. \$2.00.



Dressed up mod version of famous Mack Bulldog Truck. Open cab, bucket seats, stake bed, chromed beer barrel gas tanks. Astro wheels and weenies up front. Wide slicks on rear. Barrels included. Kit PC189. \$2.00.

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WANTS SCALE DRAWINGS

Could you provide me with information as to how I could obtain all of the scale drawings which have appeared in your fine magazine? I am primarily interested in 1/24 scale.

Ralph Martin, Jr.
Navasota, Tex.

Sorry, Ralph, the scale drawings that have appeared in back issues of MC&T magazine are not available separately. Our back issue supply is being rapidly depleted, and these will soon become collector's items. If we ever saw a good argument for being a subscriber, this is it. Subscribe NOW, and be sure you get every issue.

HERE'S A FREE TIP

I have a tip on making suspension systems. If any of you builders have an old beat-up watch, the pins that hold the band to each side make great shock absorbers!

Bruce Brown
Monticello, Ill.

Thanks Bruce. Give it a try guys.

HOW DO YOU GET GLUE OFF WINDSHIELDS?

Since I have only recently considered myself a "serious" model builder, I still goof up a lot. My main problem is getting glue (dried and wet) off windshields and other clear plastic parts. If this keeps up I'll quit altogether, because it makes me look like a clumsy beginner. I dig your mag,

and think you guys are my last hope. In short, **HELP!**

Larry Janssen
Alexandria, Va.

To be brutally frank, Larry, you simply must avoid getting glue on the windshield in the first place. We know of no cure for this problem (and it's a universal one, believe us). If any reader out there has a suggestion, we'd like to hear it. Only the smallest amount of glue should be applied to the edges of the windshield or other plastic parts, and it should be allowed to become "tacky" before it is set in place. If you apply the part when the glue is still in a wet, liquid form, it will squeeze out onto adjoining surfaces.

NOW HERE'S A STICKY PROBLEM

I build cars and tracks for the mentally retarded boys in Wisconsin. Our newest effort is a 4 lane high banked oval (9" high at the top of the curve). This is Revell track and has the slide path on the outside lane, plus 1" extra of "O" gauge cork roadbed. We are running all Monogram 1/24th scale midgets. Each lane has 12 volt transformers.

I realize my question is difficult, but can I govern each lane to keep the speed of the cars, per lap, equal? We've attempted this, but find the gearing is a problem. Cost is a definite factor, as we "give" these tracks to the boys.

The current track we are working on has 12 outside curves (6 on each turn) and 24 outside straights (12 on each straight). We have not mentioned inside lanes, straights or curves, but they are all there. We have all 4 lanes in place and are racing, but unevenly. I don't know of any figure "8" midget track in this country. Please help me figure out a good raceable OVAL. We think, and Monogram agrees, that we build some of the most realistic midgets in the country.

Edwin A. Bortz
16555 Lillan Road
Brookfield, Wis. 53005

Before we attempt to help you, Ed, we'd like to say that we think you're doing a very worthwhile job. Congratulations, and keep it

up.

The easiest way around this problem, is simply to break your races up into 4 equal periods of time. Draw lane numbers, first. Driver number 1 starts on lane 1, driver 2 on lane 2, etc. Race for 5 minutes (or 10 minutes, or however long you decide on) then shut the power off. Keep track of the laps. When the power is shut off, set the car on lane 1 over on lane 2, right next to where it stopped. Set the car on lane 2 over on lane 3, and so forth. The car on the last lane (4) would be set on lane 1. Now race for another five minutes, and shut the power off. Advance the cars to the next highest numbered lane, and start racing again. When all drivers have raced on all lanes for an equal amount of time, you will find that the distance travelled by each driver is exactly the same, no matter what the track configuration is! This completely equalizes the racing. Assuming that all cars are the same, you're going to find that the boys will be doing some very com-

petitive racing. This is so much easier than trying to juggle gear ratios, etc., that there's no comparison. Try it.

And if there are any readers out there who have good equipment that they no longer use, we suggest that you do a good deed, and send it along to Mr. Bortz. The world could use a few more people like him.

AN IMPOSSIBLE REQUEST

How much would one of your staff members charge me to build a "pro" 1/32 scale chassis for club use. I'd be willing to pay up to \$30.

Eric Hauffer
San Diego, Calif.

Eric, we nearly go out of our skulls every month just trying to get this magazine on the newsstands. You can imagine what it would be like if we took time out to go into the car building business! We get a lot of requests such as yours. We'd like to help, but building a good chassis takes time—time we just don't have.

You'll find a lot of good information in our articles on modifying home set cars, and scratchbuilding articles. And let's face it, it's more satisfying if you build a winning chassis yourself. You can do it. It will just take a bit of practice.

MORE TRACK BUILDING ARTICLES PLEASE

There are a lot of us fellows out here who would like to build a slot track, but just plain don't know how. How about some "how to" track building articles?

Alex Draeger
Memphis, Tenn.

We're planning a complete article right now, Alex, on how to build a NAMRA-approved 1/32 scale home racing track. It will make its debut soon. Watch for it!

For those who like to drive the hottest cars money can buy, THORIC proudly offers a

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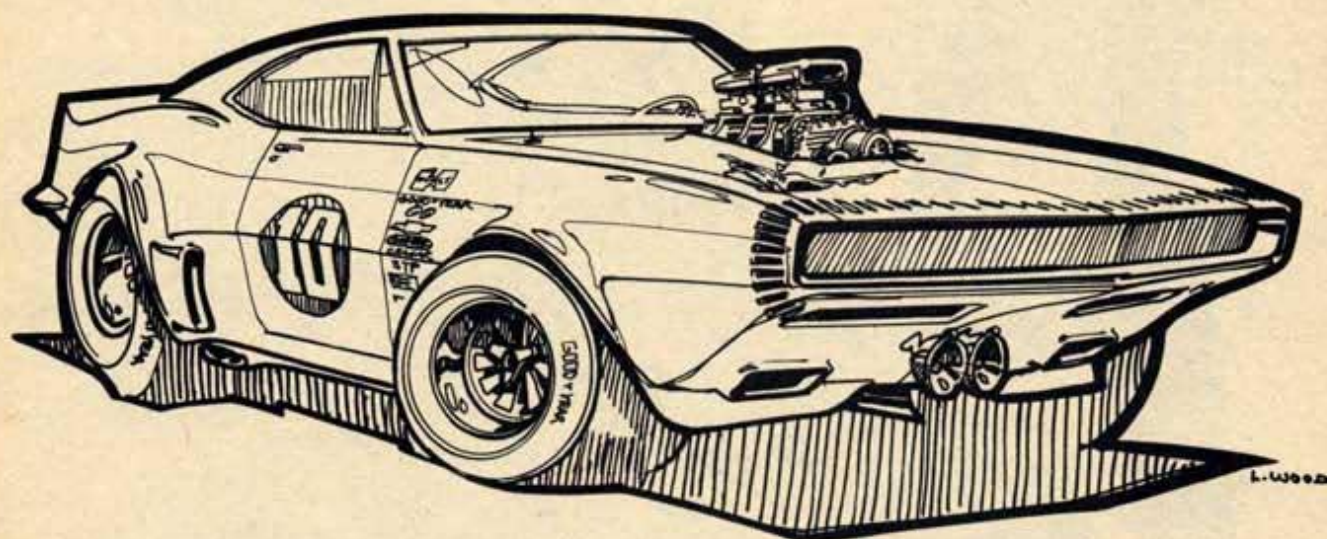
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"The hardest part of this model to build, was the second stage."



"I shouldn't have used all those old radio parts; it won't run, just plays music!"



Would You Believe? Champion Has Their Own Hand Control!

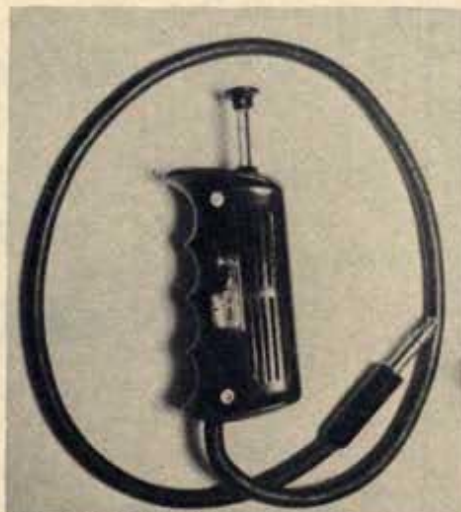
YES . . . AFTER ALMOST THREE YEARS IN THE BUSINESS, WE FINALLY CAME OUT WITH OUR OWN. WHY THE DELAY? WE LIKE TO OFFER THE BEST TO OUR CUSTOMERS. . . NOT JUST COPY THE OTHERS, SO MEMBERS OF TEAM CHAMPION AND OUR ENGINEERING DEPT. KEPT EXPERIMENTING UNTIL THE BEST POSSIBLE DESIGN AND THE FINEST COMPONENTS COULD BE ASSEMBLED AND OFFERED TO YOU. HERE ARE THE REASONS WHY THIS CONTROL IS THE BEST YOU EVER PUT A "THUMBS DOWN" ON!

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1 REASON WHY NEWER MOTORS WILL RUN FASTER IS THE USE OF HEAVY RESISTANCE - FREE WIRE. (1/10th OHM RESISTANCE FOR 5' OF THIS NEW WIRE).

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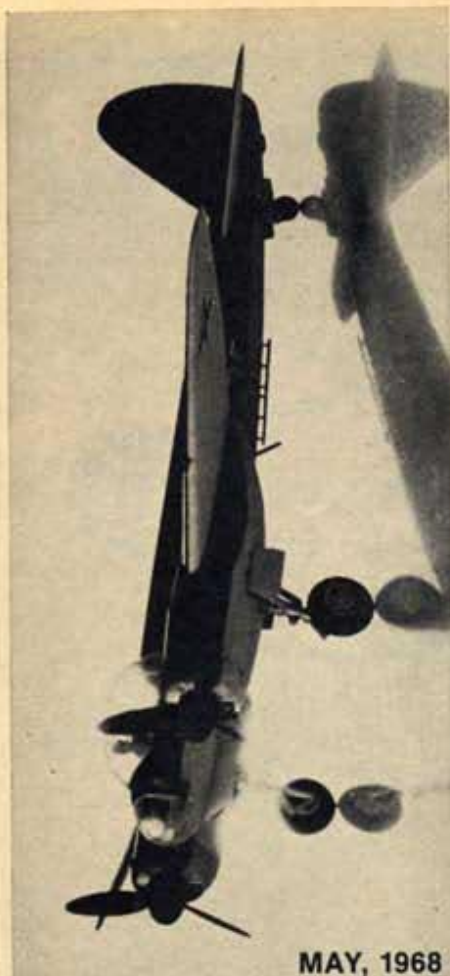
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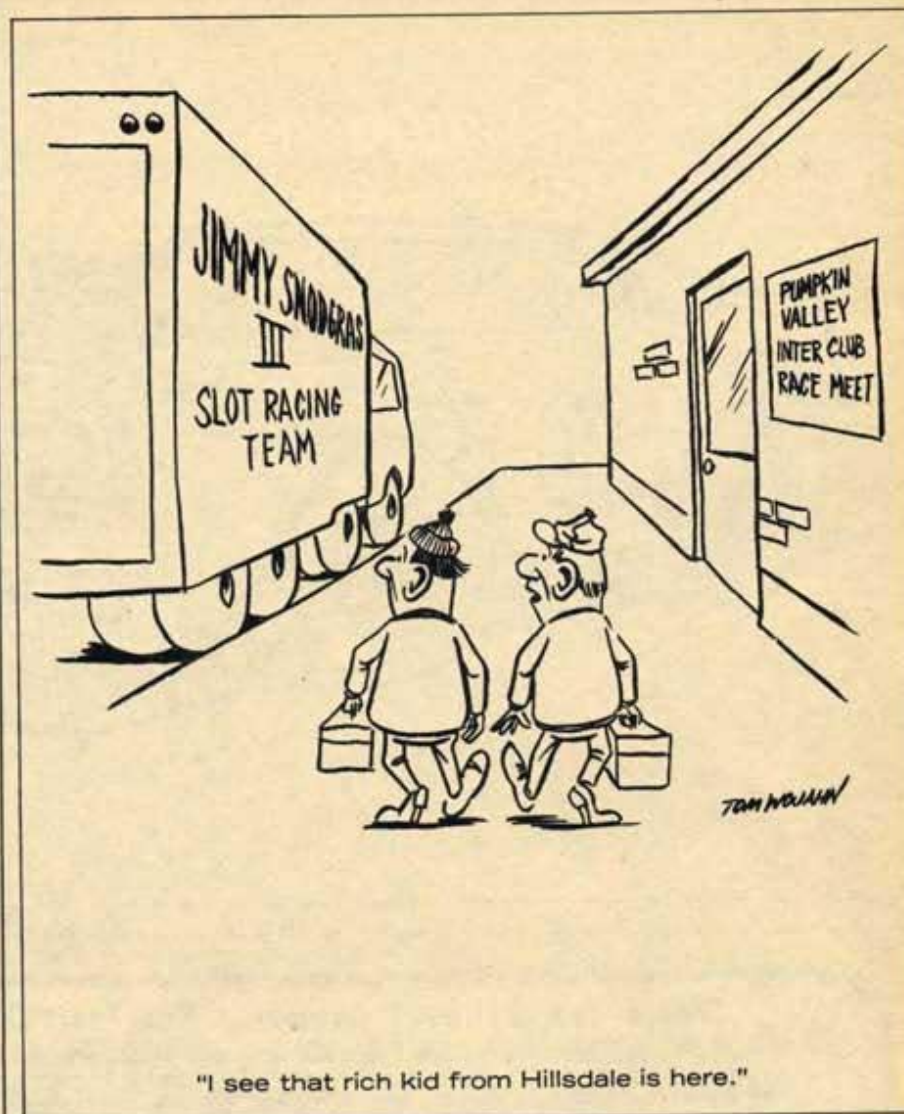
Beethoven, The Bomb

The JU88 was the Luftwaffe's most versatile weapon. It was a fighter or a bomber...and under the code name, "Beethoven", it became the war's first guided missile. The JU88 was loaded with a 5-ton charge and guided to target by another airplane with radio control. The explosion could penetrate 60 feet of concrete...or demolish an Allied ship. Revell now has an authentic model kit of this German killer. It's not as devastating as the original version, but otherwise it has all the realism you could ask for. A fascinating contrast: building the model can be entertaining, peaceful and relaxing. Less than \$1.30.

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Model of
the Month



"I see that rich kid from Hillsdale is here."

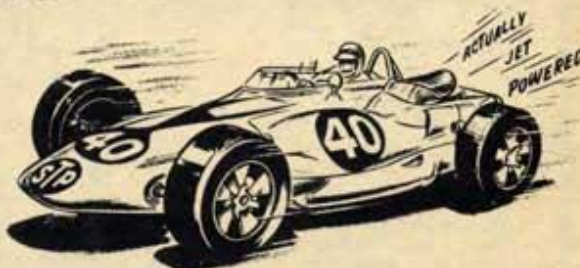


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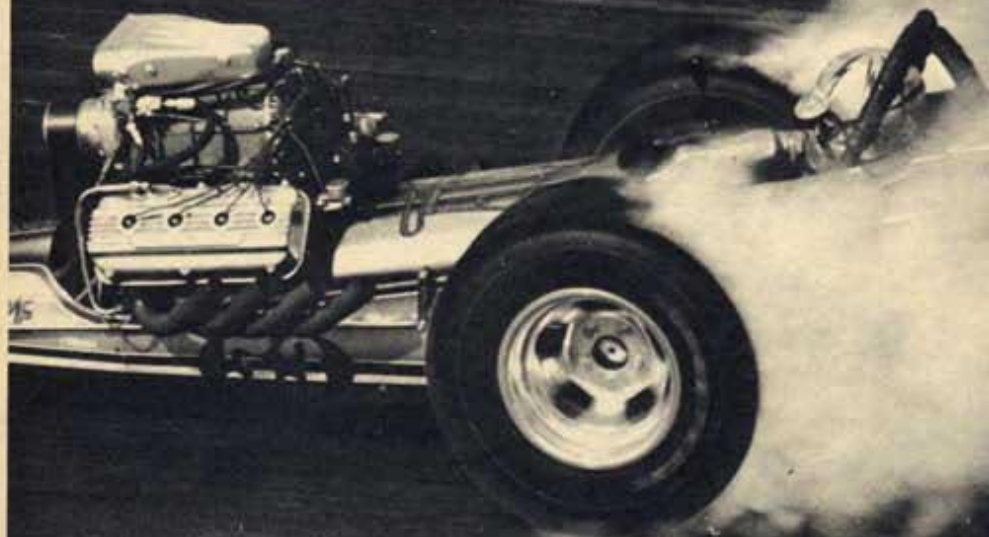
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THE WORLD'S WILDEST WILLYS!

AMT duplicates "Ohio George" Montgomery's great car



By Don Emmons

"Ohio George" Montgomery lays claim to the title of the "World's Wildest Willys." I think along with that could go the title of the "Most Beautiful Willys," also. Now after building the AMT model, I can truly say that it can lay claim to both these titles for 1/25th scale models. The model is very well detailed and when you have it finished, you will agree that it is a perfect scale replica of Montgomery's great car.

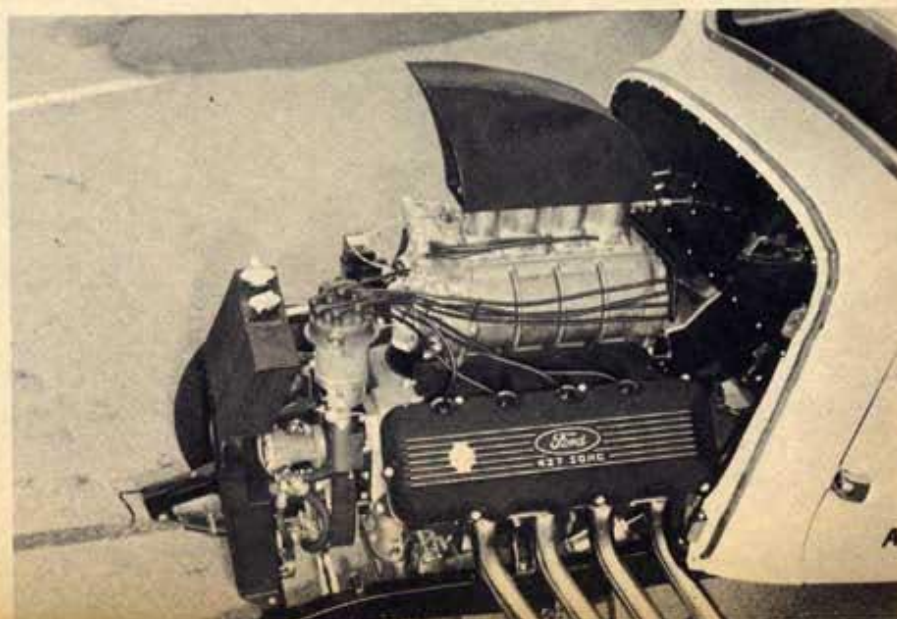
Regardless of how sharp a model kit is, there are always things that can be done to improve the finished model. I have shown a few areas that can be super-detailed to give your model that "something extra" to set it apart from the stick-it-together.

I like to paint all my models even though the plastic is cast in the proper color. In this case,

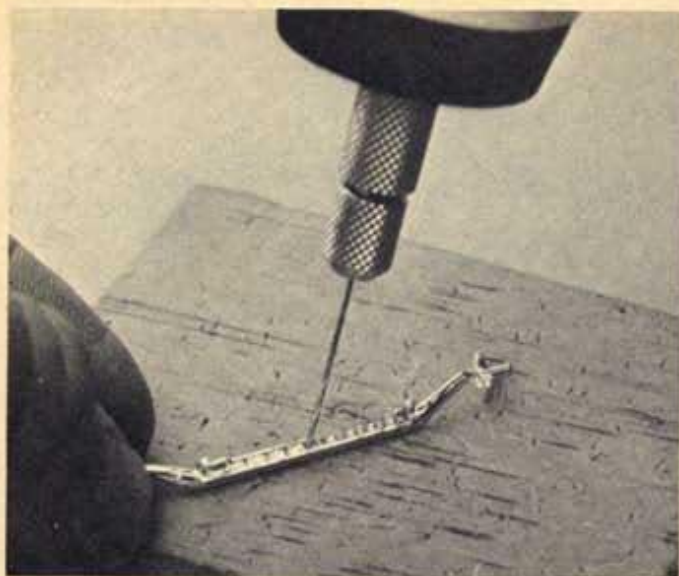
painting was necessary because I filled the top. I mixed a couple of drops of Testor's #1108 blue with their gloss white to duplicate the shade of Montgomery's car. The only draw-back here is that you must have an airbrush or a

small spray gun.

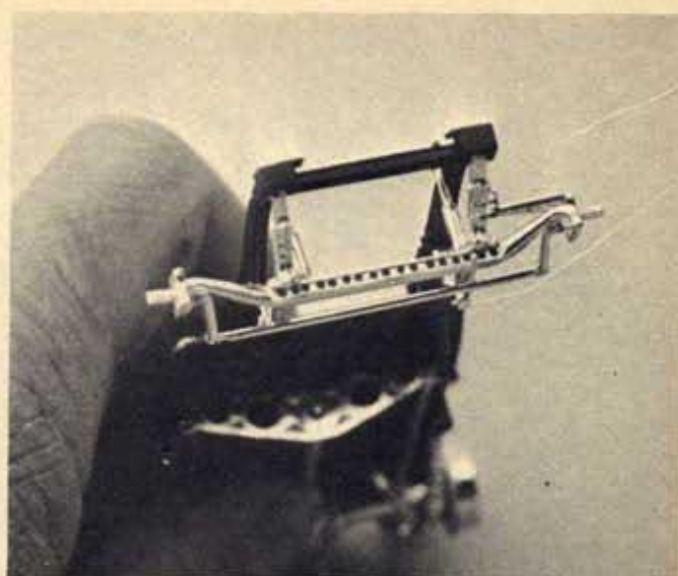
If you plan to duplicate Montgomery's car, study the color photos on the kit box. They were put there to show the proper color scheme, and to show you how to detail the model.



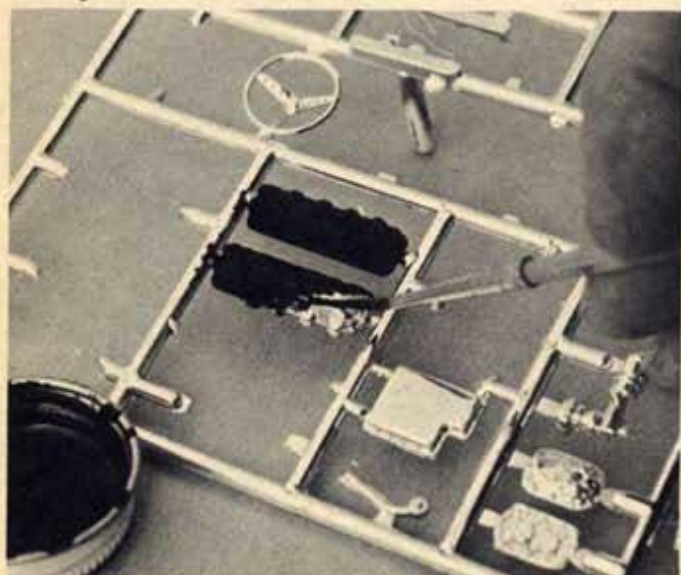
Photos by Don Emmons



1) Drill out the front axle to add even more realism to the unit. Use a drill between #65 & #70. Drill out the simulated holes, in addition to drilling a hole between each simulated one. Space them evenly.

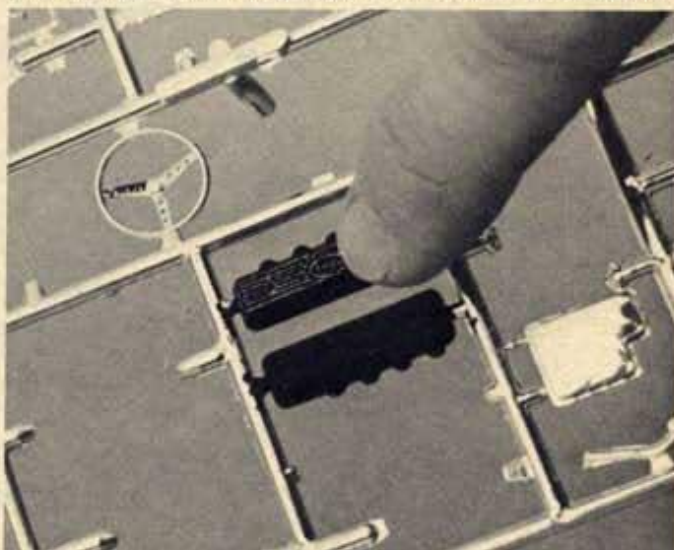


2) Front suspension is together, and you'll be proud of the way the axle looks. This minor detail adds real depth and is very noticeable. This is even more important than engine detail, since the engine compartment can be kept closed if you do not detail it. Of course it is best to do both.



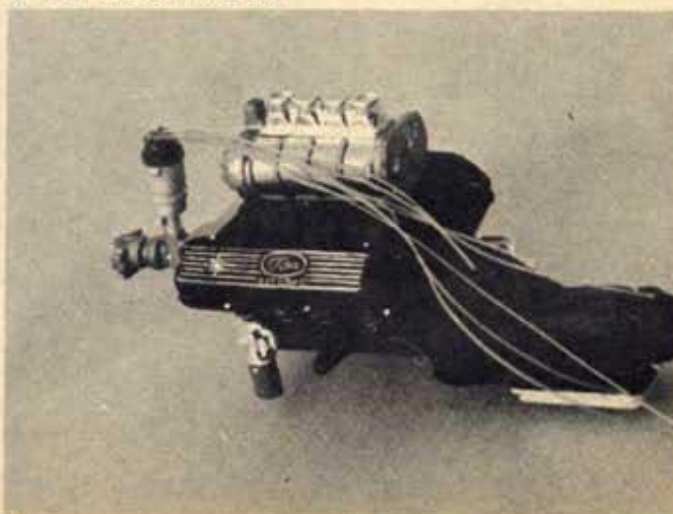
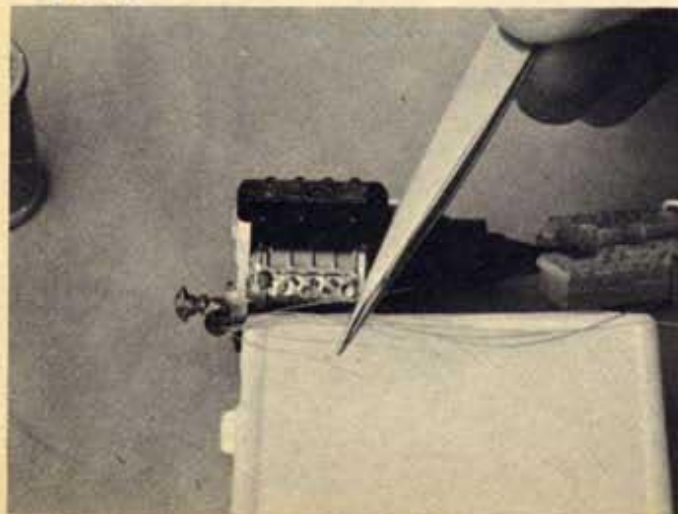
3) Before removing cam covers from tree, paint flat black and set aside to dry.

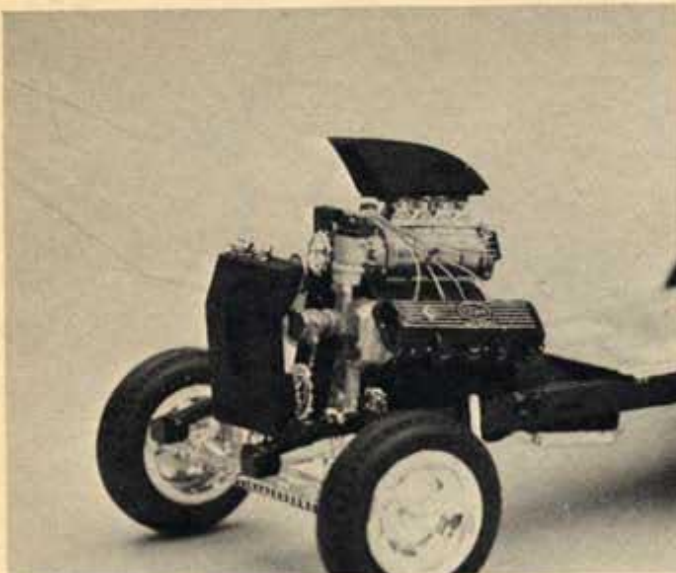
5) With engine mostly assembled and mag glued in place, lay the engine on its side and glue threads (simulated spark plug wires) to top of mag cap.



4) When thoroughly dry, gently rub the finned detail to remove paint from the chromed areas. Be sure not to mar the rest of the cover.

6) Thread should set for a few hours after being glued to cap. This gives sufficient time for glue to set up completely.

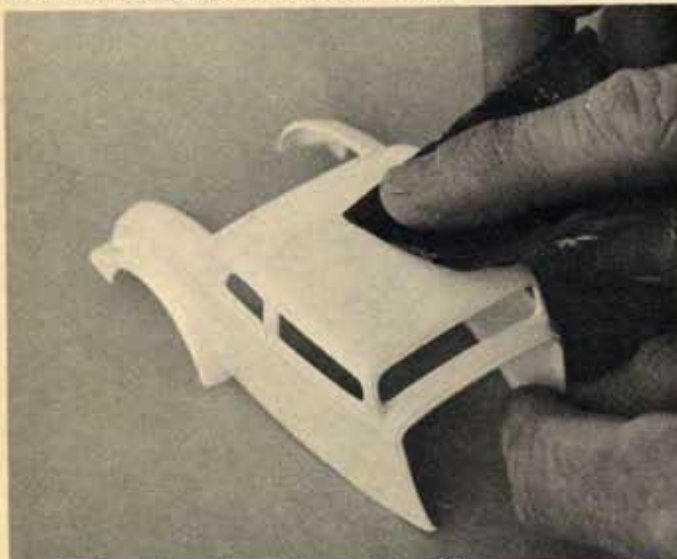




7) Chassis is beginning to take shape. Spark plug wiring and fuel lines are duplicated from different sizes of sewing thread.

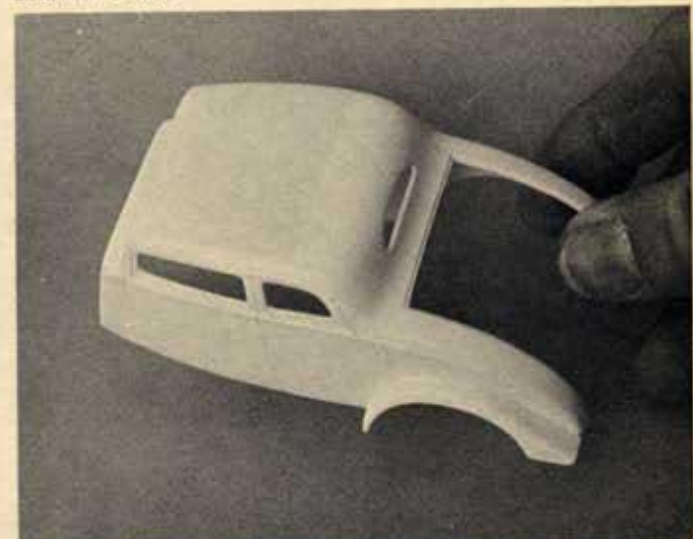


8) With top inset glued into place, spread on a small amount of putty to fill the crack. Duratite Surfacing Putty works very well and dries within 20 minutes.



9) When dry, file off excess with a coarse file and then #320 sandpaper. Finish with #400 paper.

11) Chassis is painted gloss black and interior is flat aluminum. Center area of seats and interior side panels were painted with Testor's blue #11 and then a coat of Testor's Dullcote over this.



10) A few coats of primer (I used flat white) should be sprayed over the puttied area. Then sand with #600 sandpaper.

12) You will find that more detail can be added by mixing some flat black with flat aluminum, which gives a darker shade to be used on some of the metal parts. Both this color and stock flat aluminum were used here.



Spark plug wires were duplicated with sewing thread that was pulled thru beeswax. Fuel

lines are heavy duty thread. To simulate fittings, paint ends of thread aluminum color.



THE 1968 HOBBY SHOW

It's going to be a great year!



Cox has 3 new 1/32 scale RTR cars at \$10.00, with Lil' Cuc' chassis and clear bodies.



Monogram's 1/32 scale Stingray will be available only as a ready-to-run at \$8.00.

IMC offers this series of four 1/32 static car models of the '65 Grand National stockers.



Early each February, the dealers and wholesalers of the hobby industry are treated to a display of what's new for the coming year at the Annual Hobby Industry Association of America Trade Show in Chicago. The public is not invited, so we offer you this complete rundown of what will be on sale during the coming months. Don't rush over to your dealer and say "I want..." because he is not likely to have whatever it is YET. The new products shown will be released over the next 3 to 12 months. The ads in MC&S will notify you when each item is available.

The most exciting automobile item at this year's trade show was, without doubt, the Tamiya 1/12 scale Honda Grand Prix car. The pictures give you only a hint of the beauty of this model. The steering wheel, suspension, etc., all function. In a future issue we'll give a full report on this car as well as a similar car by the Imai firm (Tamiya's competitor). MRC (Model Rectifier Corporation) will have the Tamiya car on hand in about 30 days, and AHM (Associated Hobby Manufacturers) will follow up with the Imai version. Both are made in Japan.

1/32 scale racers will welcome the '68 Stingray ready-to-run and Cox's new RTR Lola, Ford MkIV, and Ferrari P4. The Monogram 'Vette uses the same chassis shown in last month's MC&S, while the 3 Cox cars feature the Lil' Cucaracha chassis with painted clear plastic bodies that look *remarkably similar* to those beauties from Lancer. MRC is placing thousands of dollars in inventory to import the pioneer home set line, Scalextric, from England. The new Scalextric line features up to eight lanes of racing with banked track, Mabuchi-powered cars, a new controller designed by MRC, electric lap counters, and prices near or below the other popular sets. Speaking of sets, Monogram has added banked track and a mechanical lap counter and Revell has an RTR Cougar and Firebird in 1/32 scale.

Those who race 1/24 scale on the commercial race tracks will be pleased to know that there are over 100 "big time" races, for non-professional drivers, scheduled at many of the 1,000 or so commercial race centers across the country. The new brass strip frames by Dynamic with their much-copied "Sloppy Sam" body mounts, etc. will make it a bit easier for most of you to win one of



Monogram adds this mechanical lap counter to their home set tracks.

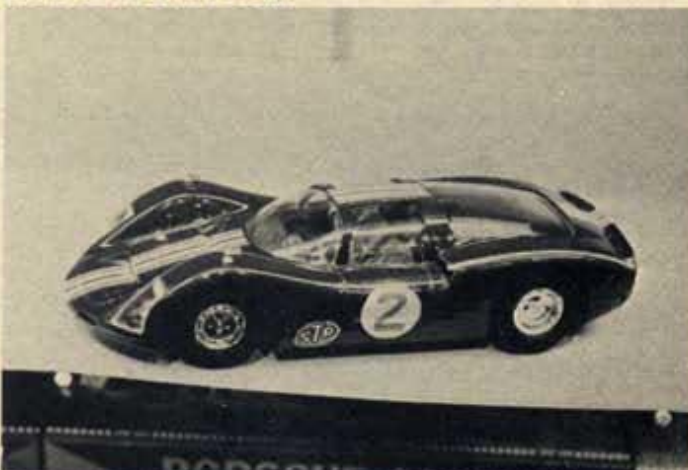


Also new from Monogram are banked track sections to fit their sets.

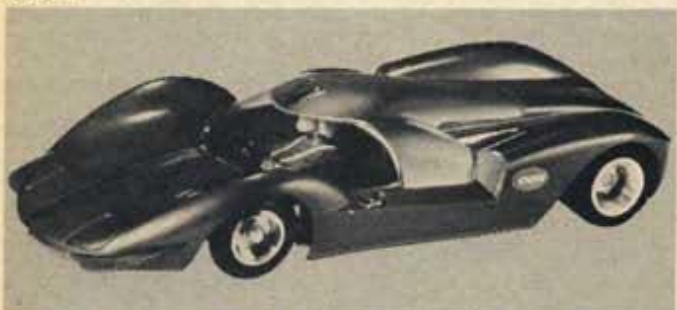


Firebird "400"
Easy to assemble plastic model kit of the winning car that conquered class and economy

Revell adds a Cougar and a Firebird to their 1/32 RTR series at \$8 each. Static versions are \$1.00 each.

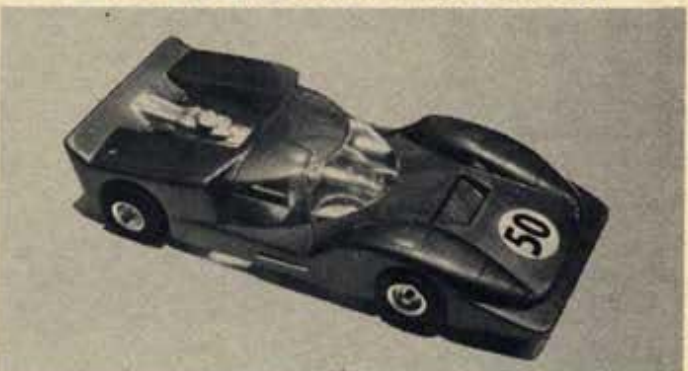


MPC offers a new series of three 1/32 scale static models at \$.75 each. Easily motorized.

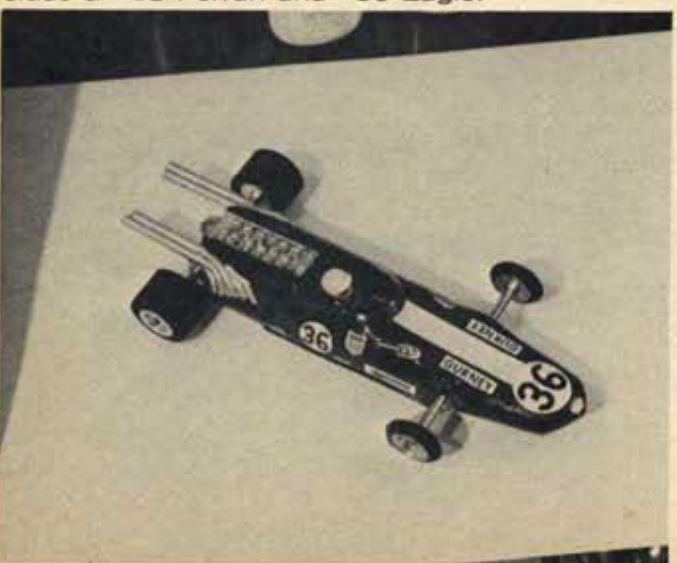


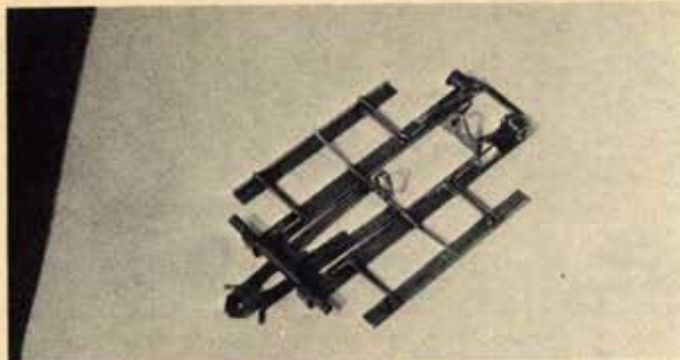
Cox "Super Cuc" has extended pickup arm, Super NASCAR motor, new guide, \$14.98 RTR.

Dynamic's newest, the "Slimline" RTR cars, include a #18 Ferrari and #36 Eagle.

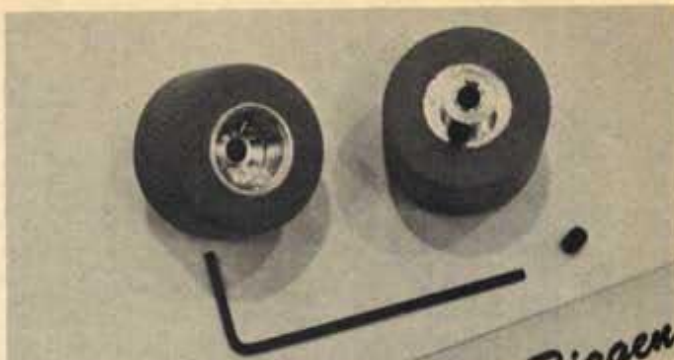


JAD/Riggen "Chappie XL" RTR is custom design with proven features. \$12.95.

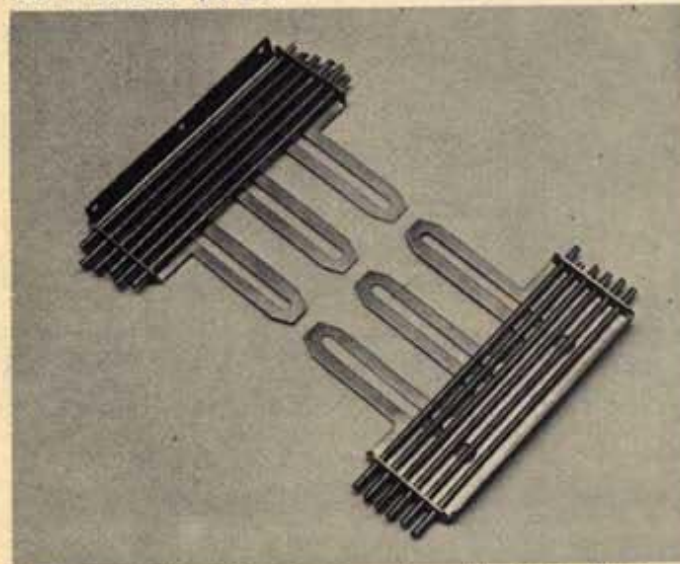




Dynamic "Sano" chassis is latest strip brass to fit '68 Mabuchi, with "Sloppy Sam" body mounts, etc. in brass. \$6.29.



Riggen's new set-screw wheels and tires are \$2.20 a pair. 1/2" or 5/8" wide.



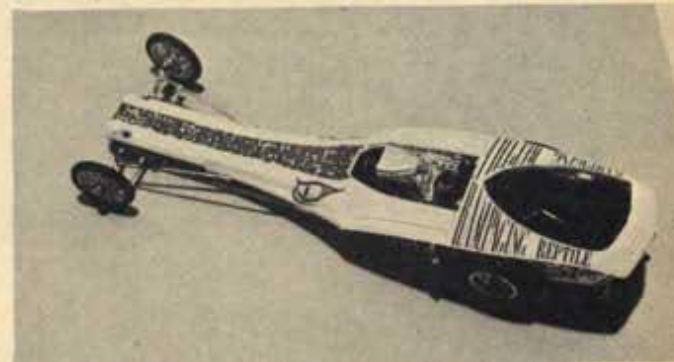
Buzco outrigger body mounting kit \$.69. Same Buzco mount with rod weights (shown) is \$1.05.



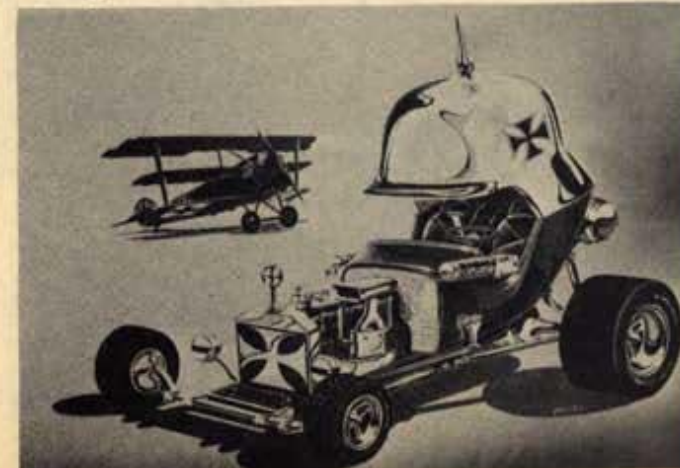
Latest in run of Monogram "way-outs" is this Garbage Truck, complete with "rock" band.



Racing team tow car and trailer kits are new from AMT. Here are the first three. Monogram "Red Baron" looks just like drawings.



AMT "Hippie" Hemi" is one of the best drag car kits of the year with full chassis and two sets of decals for Reptile and Hemi. \$2. Javelin by JoHan is copy of "Javelin SST" \$2.



these race events. Cox has added a new "Super" La Cucaracha with a longer pickup arm, trailing guide, and "Super" NASCAR motor; all RTR at \$14.98. They are also offering a new series of 1/24 scale kits including the Cheetah, Dino Ferrari, 2D Chaparral, and 2E Chaparral with the Iso-Fulcrum chassis, closed cell foam tires, and other improvements at \$9.98 per kit. Separate, non-breakable, polypropylene (same material as the La Cucaracha) bodies for a Cheetah with a front diplane to cover the extended pickup arm of the better handling chassis are also new from Cox—\$2.00 each in a wide variety of plain and metallic colors.

Set screw wheels are finally taking over with AJ's, Rikken, Buzco, Dynamic, and Cox each displaying their versions of the "ultimate" in wheels.

1/24 scale home racers (and some detail-conscious commercial racers, too) will be delighted with the MRC/Scalextric 1/24 scale Ferrari GP car with engine and suspension detail, drop pickup, bevel gears and 26D Mabuchi motor. Oh yes, a full driver and interior too, in RTR form at a price rumored to be less than \$12. MCR will also import some of the Scalextric 3-lane 1/24 scale sets with stainless steel pickup rails to allow use outdoors. A well-detailed XKE and Alfa Romeo GTZ with 26D Mabuchi motors and mechanical brakes are featured in these sets and the cars are also to be available separately.

Apparently, outdoor home racing is popular overseas, for importer Charles Merzbach, also displayed the German Faller 1/24 scale home sets with attach-it-yourself braid for the pickup strips so the track can be permanently assembled into units of 2 to 6 straights or curves for easier handling. The materials are supposed to stand at least a small amount of weather. Sets range from \$49.98 for a 2-lane figure "8," to \$100 for a 4-lane figure "8." All parts and wiring is included, but no power pack or cars.

In HO scale, Tyco announced a '68 Sting Ray and banked track with adapters to allow use of the bank with the Aurora track sections. Aurora announced a pair of dune buggies; one without top, but with dual rear wheels, and the other with a striped top and standard wheels.

The photos tell better than words the story of the new static model cars. AMT announced a Meyers Manx, Shelby GT500, and a scale

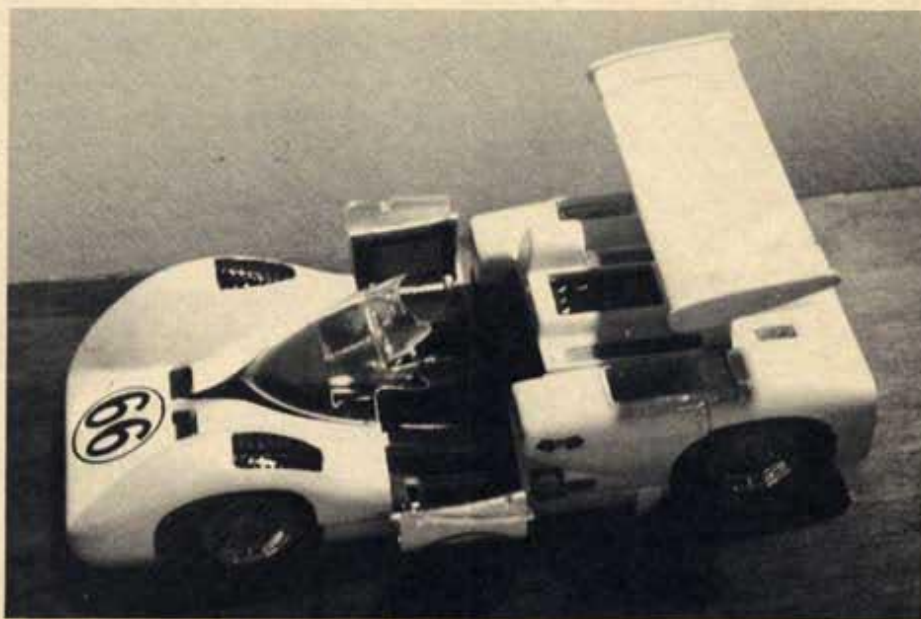
Peterbuilt truck/tractor, but no assembled models were shown. IMC has a 1/20 scale dune buggy which should be a kick, but, again, no built-up models are shown.

1968 will carry the title "The Year of the Collector's Cars" if new products are any indication. It seems that almost every manufacturer has finally realized that the Matchbox brand metal cars are the best selling toy item in the entire country (and that, believe-it-or-not, is in dollars, not pieces). Mattel did not display at this hobby show, but it is known that they are announcing a line of wierdo collector's cars. Displayed at the show were new lines (to America, at least) from AMT (the familiar plastic 1/43 scale Mini Kits plus a new line of metal 1/65 scale "Pups"), AHM with Rio and Mebetoys, Mini-Dinkys, and Aurora Cigar-Box cars. Corgi, Matchbox, Renwall, Lindberg, and Dinky all added dozens of new items to their lines of collector's vehicles.

Static model airplane buffs will have a good year to look forward to

ship. They have also added an even dozen new 1/72 scale aircraft to their series. Buzco added 8 more of their exotic French planes to expand that series. IMC has entered the static model airplane field with a series of 1/72 scale kits offering duplicate parts that have realistic *battle damage*, exposing the inner structure of the wing or fuselage. Undamaged parts are also included for the "purist," but the "damaged" parts are sure to find a wide following. They add a certain element of action to the models that even the photos do not clearly indicate, opening a new field of realism for aircraft modelers.

As in 1967, the big model railroad news was N gauge. For 1968, you can look for several ready-to-run, fully-sceniced, layouts like those from Revell. 4 new N gauge steam locomotives are on the way including the Atlas 0-8-0, Revell's 2-6-2, and ConCor's 4-6-4 and 2-8-2. A series of 12 new diesel locomotives are planned including Rapido's GP7, GP9, both low and



IMC Chaparral 2E is a beauty at \$2.00.

as well. Monogram's 1/72 scale B52 bomber had everyone buzzing. This model has a wingspan of about 3 feet, with full cockpit, flaps, and landing gear detail. When the kit is nearer to the dealers shelves (late this summer), we'll give you a more detailed rundown. Revell added a fourth to their series of super-detailed 1/32 scale aircraft with the popular Japanese Zero. AMT will soon offer the arch-foe of the Star Trek TV program's space ship Enterprise; the Klingon space battle-

high-hood GP35s and Alco C-425s, Alco 1000hp switcher, Alco PA-2 diesel, F-9 "B" unit (at last), and even a New Haven C-C Electric-prototype. Revell has the EMD SW-1500 switcher and the Alco C-425 low-hood. ConCor has an EMD GP-40, Atlas an Alco RSC-2, and the Fairbanks-Morse B-C diesel. Virtually all types of freight and passenger cars are on the way from these makers ranging from 1920-era equipment to the latest "Hi-Cube" cars. Dozens of well-detailed plastic

building kits of American-prototype structures will arrive during the later part of the year including 2 different roundhouses and an operating turntable. In HO scale, MDC announced some excellent 1900-era injected molded plastic kits for a box car, reefer, and stock car. And a new firm, Continental Monarch, displayed a 1900-era baggage, postal, and coach to be available as injection-molded plastic kits. Tyco will have operating lumber and sand cars

as well as a big 2-10-4 steam locomotive for only \$34.95 RTR.

Ship modelers will appreciate the complex Revell whaling ship, the Charles W. Morgan. For newcomers, a much simplified sailing ship kit of the famous Cutty Sark will appear later in the year from Revell. The carrier Franklin, and the battleship Pennsylvania have been added to Revell's 1/720 scale series of "waterline" models. Monogram offers a well-detailed cruising sloop,

the 12"-long Voyager. Aurora has added a Russian guided missile sub and an armed command junk to their ship collection. Pyro introduced a new series of four historical sailing ships in the 15" size range including French, Portuguese, British, and Dutch Man-o-Wars. When properly painted, these Pyro ships are extremely colorful and interesting art objects.

1968 will be the best year yet for model builders.



Latest version of full-size "Hemi Under Glass" is duplicated in MPC's kit. \$2.00.



Corgi metal Porsche Carrera is well-proportioned and detailed like rest of line.

New race set by Corgi includes nice Cooper-Maserati with spares and VW truck.



Wow! That's a Ferrari P4 by Mebetoy, imported by AHM (Associated Hobby Manufacturers).



New Matchbox "Models of Yesteryear" include this 1912 Simplex tourer. Cars are metal.

Standard-size Dinky cars feature working doors, detailed interiors. Ferrari Dino.





"Mini-Dinky" series of small-scale metal cars include plastic garages as boxes.



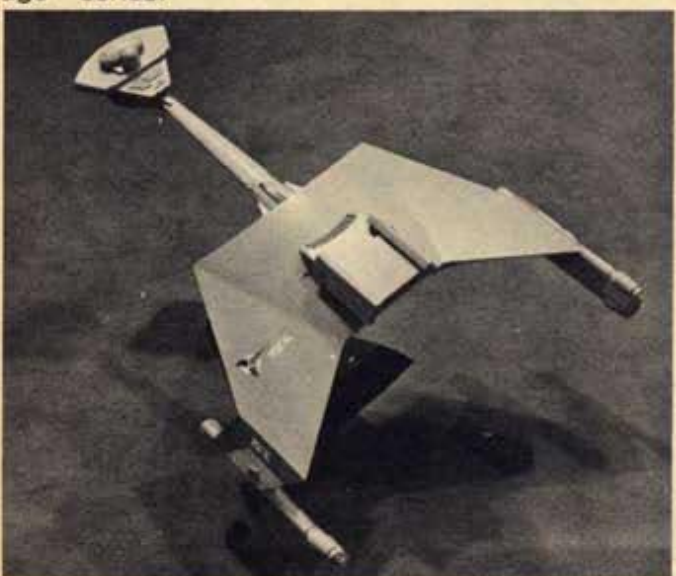
There are dozens of new modern Matchbox models this year too. #14 Iso Grifo and #38 Honda racing 'cycle with trailer.



Those realistic holes and shreds are the latest new idea in scale modeling by IMC. This is 1/72 scale Super Saber in their superb "Battle Damage" series.

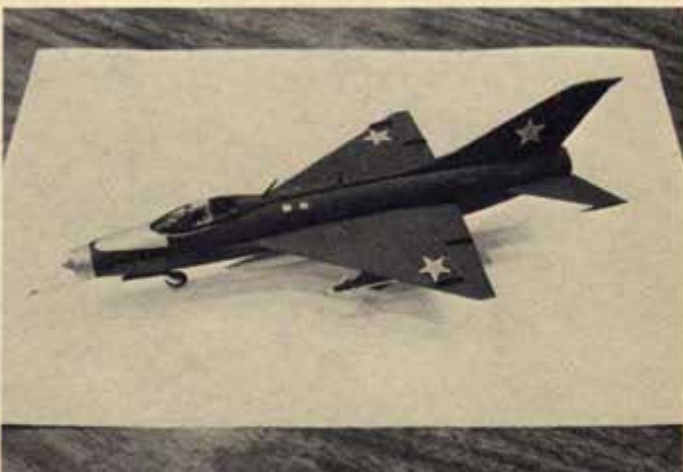


Monogram B52 had the whole industry agog. Note P51 Mustang in same 1/72 scale for size comparison. Kit will appear this fall.



From the "Star Trek" programs, AMT's battle cruiser of the Klingons.

Newest in Buzco's series of 1/72 scale French aircraft in this Poetz 631. \$2.00.



MPC's entry into scale model aircraft is marked by kits like this 1/72 scale Mig 21 and Kingfisher that include accurate markings and details.

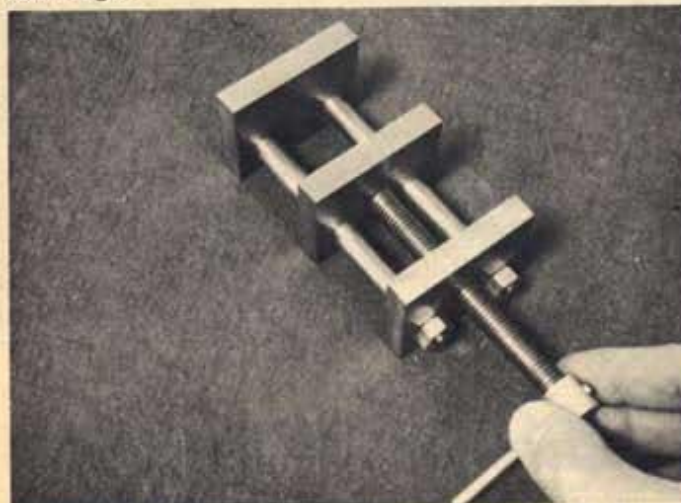




Revell adds a fourth to their series of ultra-detailed, 1/32 scale, aircraft model kits with the popular Jap Zero.



Buzco pulls an idea from the past for a new-era thrill in race cars. This STP-Turbine model kit is actually powered by the jet-exhaust from CO₂ cartridge.

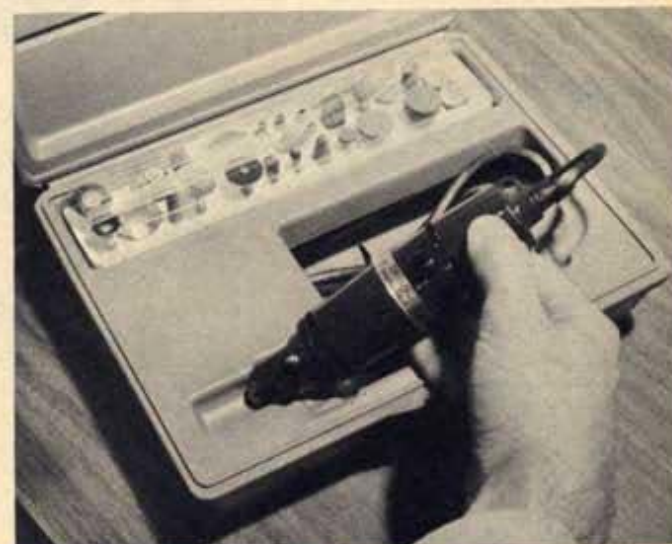


New K&S modelers vise is perfect size, built to last forever. \$6.95. K&S pliers add quality-touch to your tool rack. Prices range from \$1.95 to \$2.95.

A fold-up shop is the only apt description for the complete X-acto #99 tool set. \$60.00 buys every tool you'll need in modeling plus a place to put them..

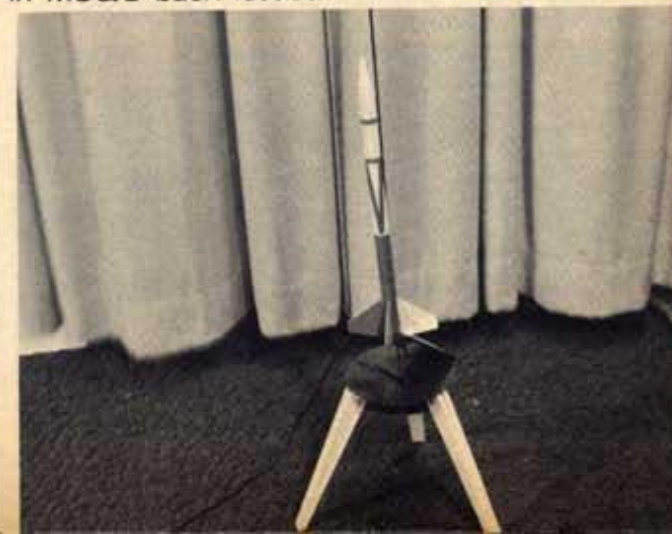


K&S now offers a full line of brass and aluminum tube and sheet stock. Look for this rack at your dealer.

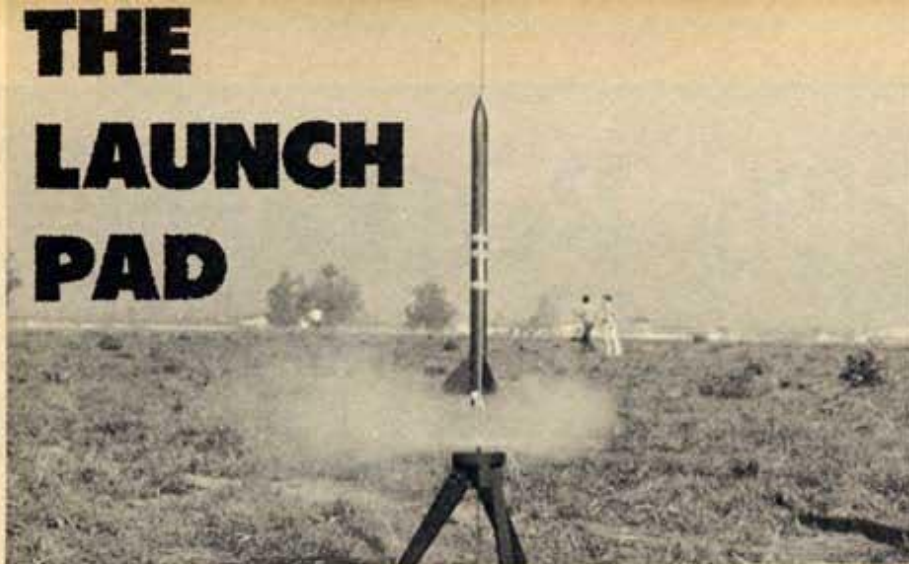


Dremel's new compact #260 motor tool has more power, smoother operation. Moto Tool alone, \$22.95; with attaching bits, \$32.95.

Model Rocket Industries exhibited their remote-controlled, electric launch pad and a variety of safe rocket kits along the same design as those in MC&S back issues.



THE LAUNCH PAD



By Michael Poss

Following the growing interest in model rocketry, *Model Car & Science* will try to print a monthly column on the hobby starting with this issue. The response received from MC&S readers about model rocketry was such that it was felt a regular model rocket feature was in order. So, fellow rocketeers, prepare to delve in the fascinating world of Model Rocketry. Here we go . . .

Just in case some of you missed out on the "where" of getting model rockets and model rocket supplies, check the rocket manufacturer's ads in this issue.

MODEL ROCKET SAFETY

Even though millions of model rocket flights have been made without incident, the situation will remain that way only if you, the model rocketeer, make it so. When used with carelessness or ignorance, a model rocket under power can be dangerous. But so can a match in the hands of an irresponsible person.

The following are guidelines from the Model Rocket Safety Code established by the National Association of Rocketry, the official model rocket organization for the United States. I suggest that you read and follow these sensible rules:

1. Use only pre-loaded factory-made commercial model rocket engines that do not require mixing your own chemicals.
2. Make your model rockets of paper, wood, plastic, and other non-metallic materials.
3. Use a recovery device in your rockets that will return them safely to the ground so that they may be flown again.
4. Do not use explosive warheads in your model rockets.

5. Check the stability of your models before flying them.
6. Fly model rockets in open areas away from buildings and power lines.
7. Use a remotely-operated electrical firing system to ignite and launch your model rockets.
8. Use a launching device that is pointed within 30° of vertical (straight up).
9. Do not fly model rockets as weapons against targets.
10. Fly model rockets in good weather conditions only.
11. When flying your rockets, make sure that they present no hazard to other airborne objects.

I can't emphasize how important it is to the future of model rocketry and the welfare of all involved in the hobby that the NAR Safety Code be observed, especially in several states where model rocketry is restricted and the subject of continuing controversy. Think about it, and I'm sure that you'll agree with me.

WEST COAST HAPPENINGS

Model rocketry is growing at an ever increasing rate in California as is the case in the rest of the nation—I hope. At last count, there were approximately 16 model rocket groups in Southern California alone that were extremely active.

A good example of the model rocket activity in the Southland was the Winter Invitational hosted by the West Covina Model Rocket Society of West Covina on Dec. 16, 1967. The NAR Arevalos Section of Huntington Beach fielded a team (including myself) for this meet as did six other clubs that were invited. Altitude, scale, and parachute duration events were held and the com-

petition lasted almost five hours starting at 9:00 a.m. And as usual, we were plagued with too much wind and uncomfortably low temperatures which resulted in inferior model performances. But there's not very much you can do about that, is there!

Despite the rotten weather and long waiting lines for launch processing, the meet was a success and a big step forward for model rocketry in California.

For you out-of-state rocketeers not familiar with the restrictions placed on model rocketry in California, or if you live here and want to know about the situation, here are a few examples of the regulations:

Model rocket engines can be purchased only from a hobby shop which has obtained a retailers license from the state fire marshall.

A licensed dealer can sell rocket engines only to persons over 21 years of age who have obtained a permit to receive model rocket engines from the local fire officials in whose area the launchings will take place.

A launching site must be approved by the local fire official. It must be an open field, free from inhabited buildings, away from dry grass, brush, or forest covered lands, and must comprise a circular area at least 1000 feet in diameter.

If you want further information on these requirements, the rocket manufacturers will supply you with it upon request. You will need more specific information if you plan on applying for an engine permit.

That's about all for this time, gang. In future articles you'll be presented with material on more specific aspects of model rocketry like designing, construction and finishing techniques, competition models and clubs, launching systems, and many of the basics in between. Also, I'd like to mention things which you, the MC&S readers, are particularly interested in. Model rocketry on the local level greatly interests me as do developments on the national scale. So, if you have anything to say, drop me a line or two (preferably more!) and I promise to put any worthwhile information to good use. Send your questions or comments regarding model rocketry and/or this column to: Michael Poss, 7855 Naylor Ave., Los Angeles, California 90045. I would really appreciate hearing from some of you.

And try not to shoot down any model airplanes while I'm gone!

The Red Baron Rides Again



Monogram's latest (and greatest!) model yet!

By Dennis Doty

Tom Daniel is no stranger to anyone who is familiar with the hotrod world. His car designs are fresh and imaginative, reflecting the latest trends, and trends that aren't yet trends. And when someone with his fertile imagination and a model company like Monogram team up, only something wild can come of it.

That something is the Red Baron, the latest in the line of wild model cars to come from the Monogram Factory.

The Red Baron's body is a

highly customized "T," and the chromed surfer helmet was lifted from a cat called the Jolly Green Giant; should have seen his surf board! The helmet, 1914 Mercedes-Benz aircraft engine, and Spandau machine guns are all W.W. I goodies, hence the name Red Baron. Talk about imagination.

This Monogram Model is extremely easy to build, and with the frame molded to the body, it makes for faster construction of your model. The only modification required of the model is to

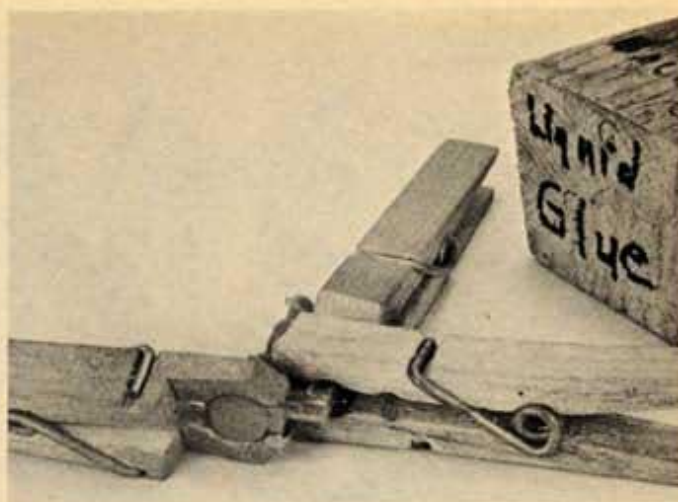
slightly enlarge the opening in the firewall. This is to let the engine fit in place better after it has been wired. The exact color of the body is up to you; any color you wish, as long as it is red.

Now that we have the Red Baron, I think Tom Daniel and Monogram should again put their heads together and come out with a model called "The Snoopy."

I would also like to thank Harb's Hobby Shop of Dearborn, Michigan for the time and trouble they went to to try and find information for me on the Benz engine.



Glue the cowl in position and tape until dry. Paint on several coats of liquid glue. Let dry and sand smooth.



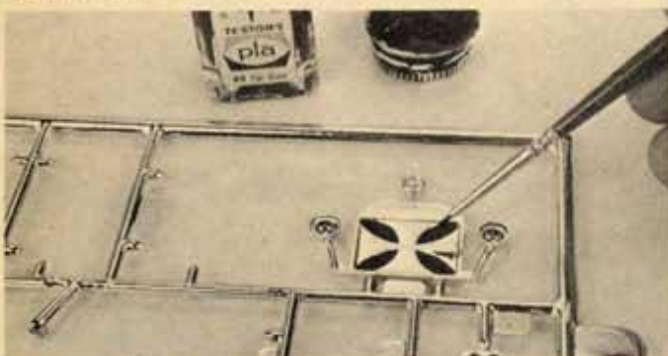
Do the same to the engine, but clamp the pieces in place with clothespins.



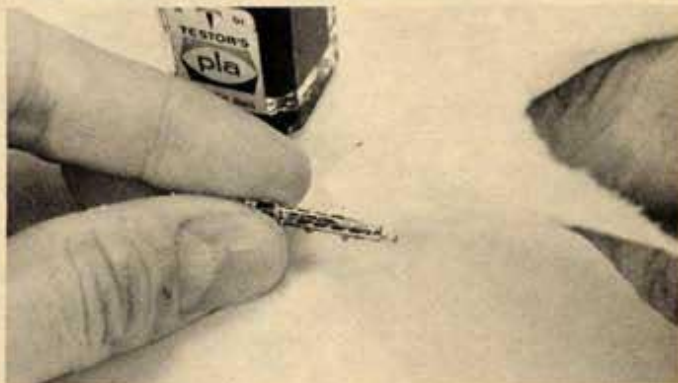
Use the smallest paint brush you have to paint the molded in lettering on the new type of Monogram tires.



Paint the Iron Cross in the mag wheels very carefully. Mistakes are hard to correct.



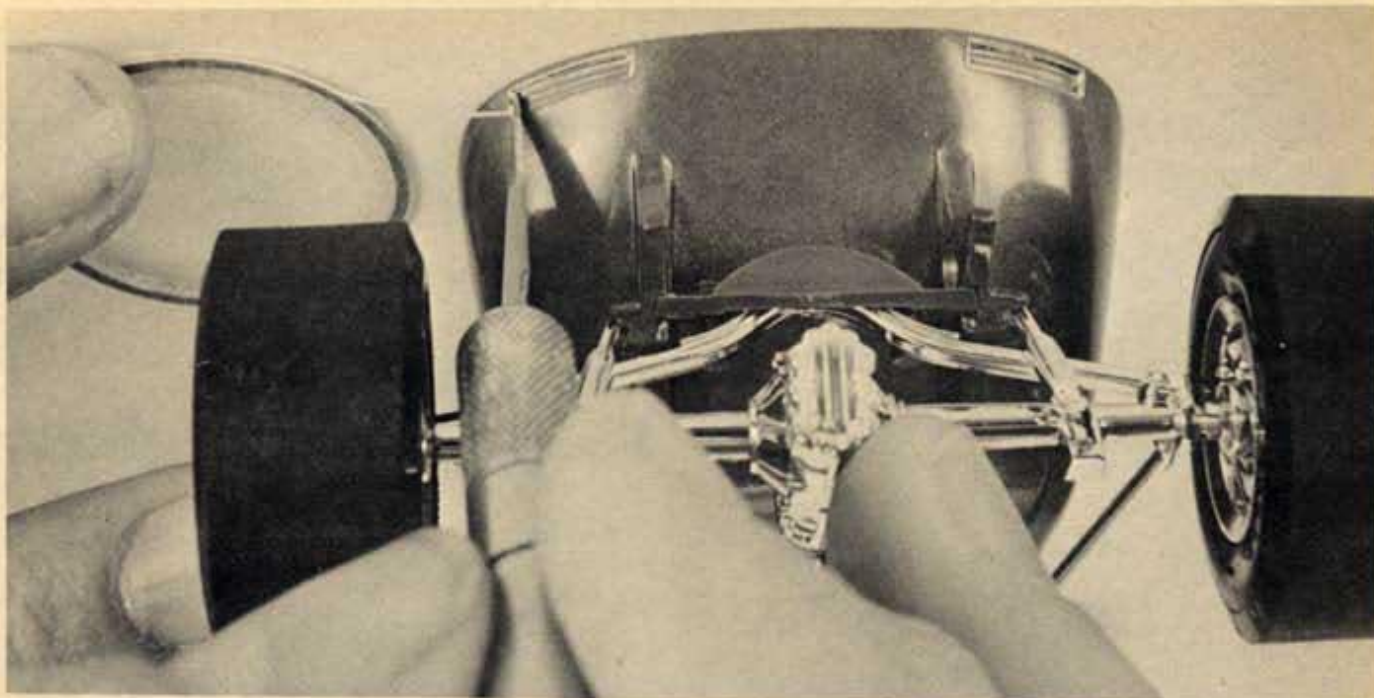
Take your time in painting the radiator core, as mistakes here are also rather difficult to correct. Paint in the exhaust openings as shown. Wipe off mistakes with a piece of cloth.



Paint only a few gun barrel depressions at a time before you wipe off the excess paint.

To simulate brake lines, drill a hole in the frame and disc brake and run a line between them.



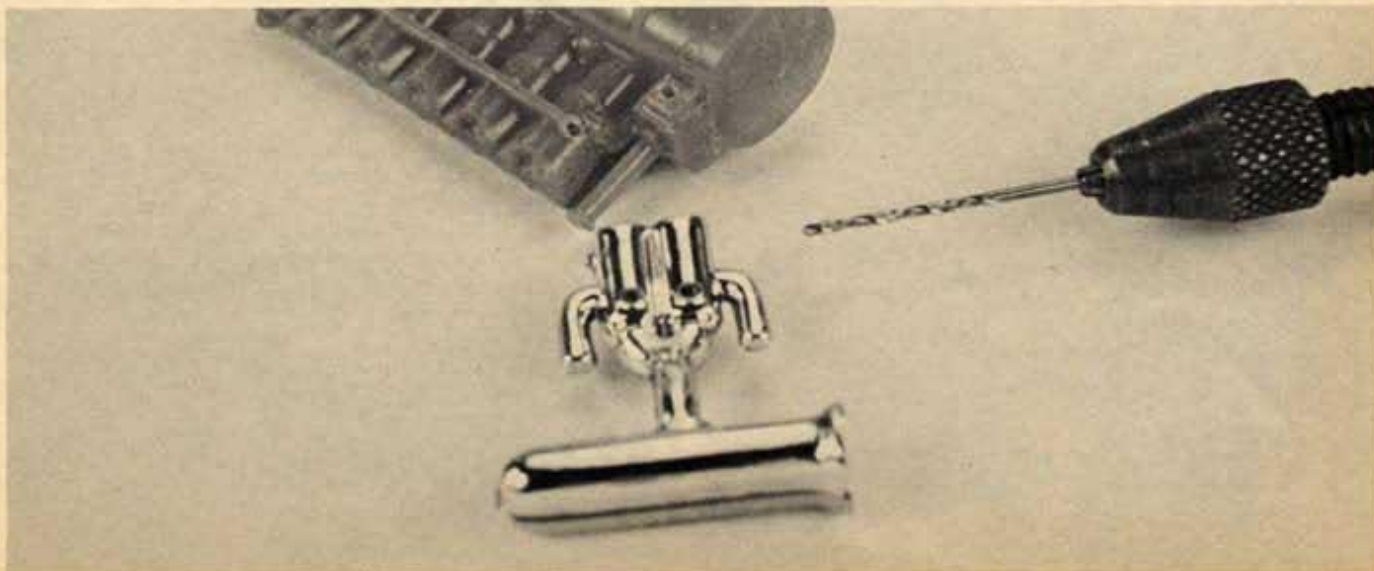


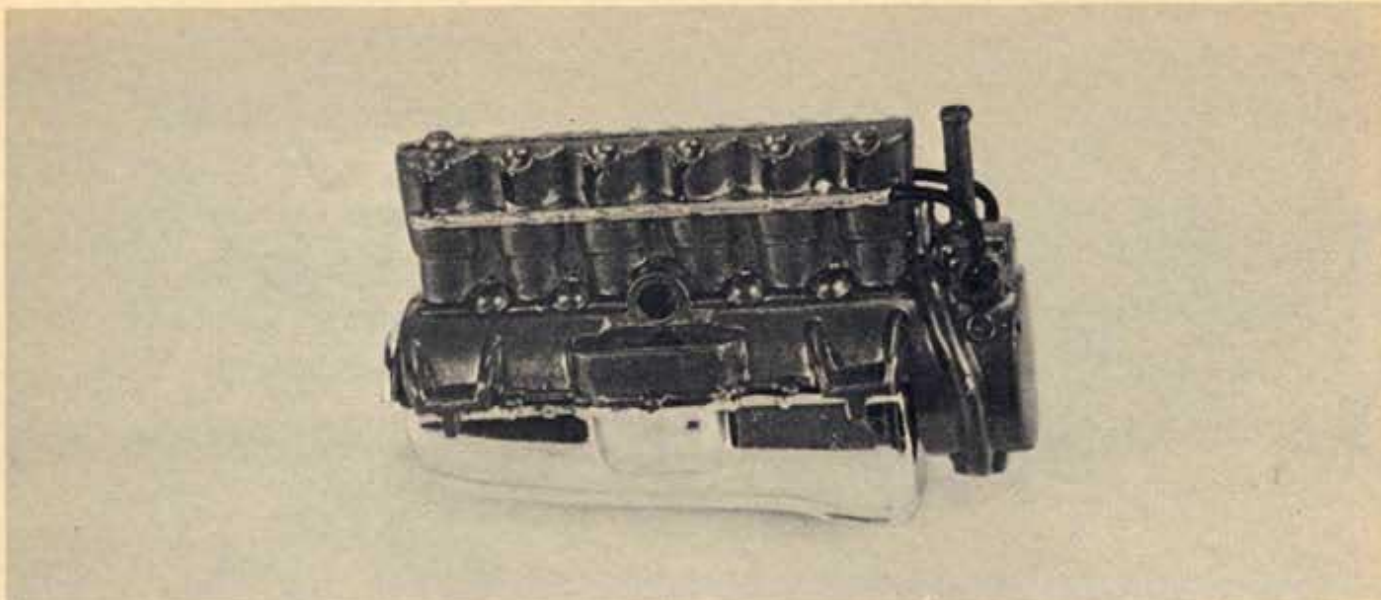
Line the rim of the taillight with 1/64" chrome tape.



Assemble and paint the interior as per instructions. Don't forget to paint the gauge detail.

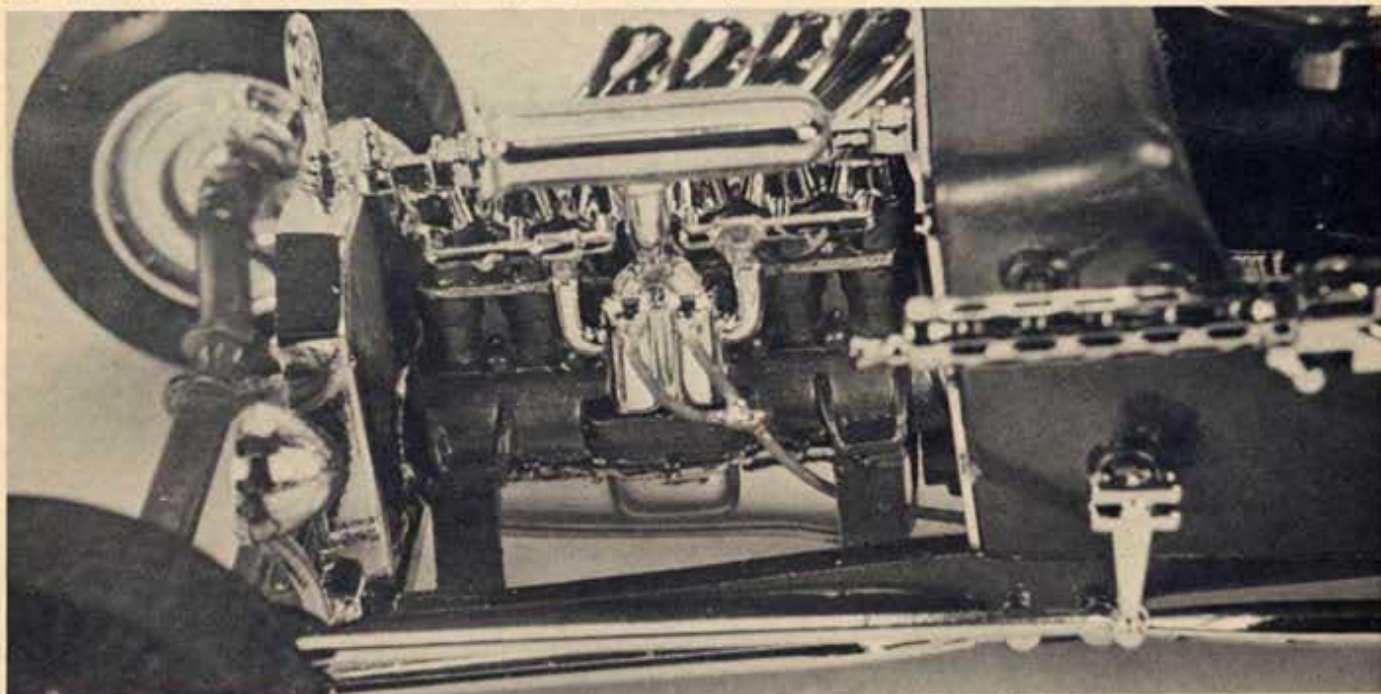
Drill holes in the end of each wiring loom and each side of the magneto. Drill two holes as shown in the carburetor.





Paint the spark plug wires black and the wire loom silver. Run a wire from the loom to the mag-

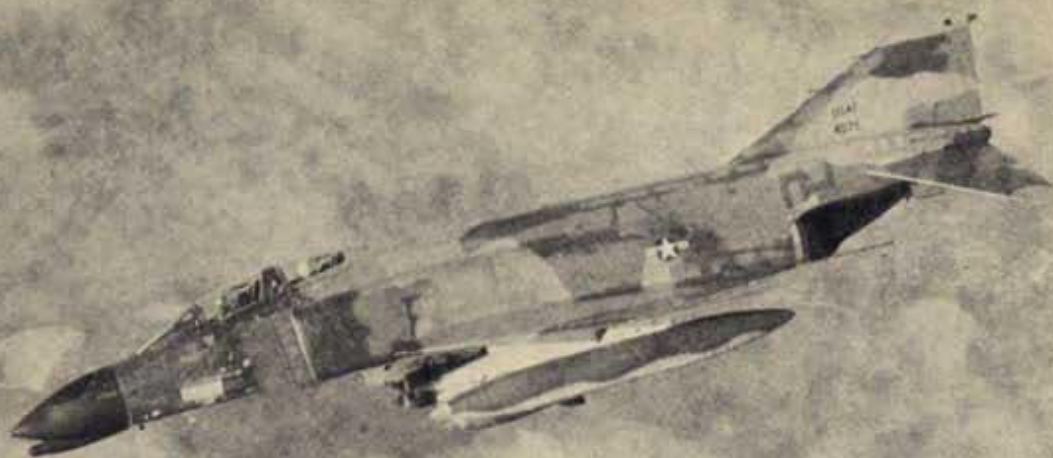
neto. A drop of glue painted black represents a plastic cover.



Run a line from the gas tank to the carb as shown. The engine is wired.

Cut out the inside pieces of the decal first. This will prevent the points on the decal from becoming deformed.





THE REVELL F-4C

The Viet Nam fighter pilot flies a far different plane from those of yesteryear.

By Robert Schleicher

The smiling gent in the Charlie Brown cap is one of rare breed of men known historically as "flying aces" for their ability to engage enemy aircraft in those aerial battles known as dogfights and emerge victorious, with the enemy



planes heading for earth in flames. The "gent" is Air Force Colonel Robin Olds who is one of the rare heroes of a rare war in Vietnam. Olds has downed at least four of the Russian-built Migs, including 2 of the superior Mig 21's in the skies of the orient. But this is Robin Olds' second war . . .

Olds, who downed 24 German planes in action during the second World War, feels that the Vietnam dogfights "aren't that much different. The tactics, the maneuvers, nobody's got anything new. The differences are in speed and closure rate."

Making an even more striking comparison, are the planes of the first aerial war where the Sopwith Camels, Spads, and Nieuports engaged the Fokkers in bi- and tri-winged dogfights. The World War I Sopwith Camel, for example, had a top speed of about 120 mph, while the F4 Phantom II of Olds' exceeds 1600 mph. Captain Roy Brown, who flew the real version of the Sopwith Camel against Von Richtofen and his circus, had only about 20 pounds of ammunition to fire from "eye" sighted machine

guns. F4 pilots have over 1300 pounds of self-correcting and heat seeking missiles and machine guns to aim through radar and computer-regulated sights. But then, so do the Mig pilots.

There are two kits available for the F4 Phantom II. Both are 1/72 scale, and both are from Revell. The F4C is the version of the aircraft flown by United States pilots like Robin Olds. It is powered by a pair of General Electric J-79 turbojet engines. The dark blue Phantom II in the photos is the version sold to the British Royal Navy known as the F4K. The "K" is powered by two Rolls-Royce Spey fanjet engines. Externally, the only major difference between the "C" and the "K" is the nose which is simplified and hinged on the planes sold to the British to fit more readily onto their aircraft carrier's elevators. The F4K is reported to be faster, since its engines are more powerful. The F4 is a two-man aircraft with the pilot in the front seat and an instrument operator (also a pilot) in the rear known as the g.i.b.s., or "guy in the back seat."

They are often much younger, inexperienced, pilots. The ground support people who prepare the planes are headed by crew chiefs who may be younger still.



The fighter the aces fly in the Vietnam war is the Phantom II. Revell offers two kits; one the

USAF F4C, the other the version sold to the Royal Navy, the F4K.

The Revell F4C kit includes markings to virtually duplicate the planes Colonel Robin Olds has used to down 4 Migs.

A runway eye view of the F4C with landing gear extended. Air brush and thinned black paint produced the missile and jet burns.



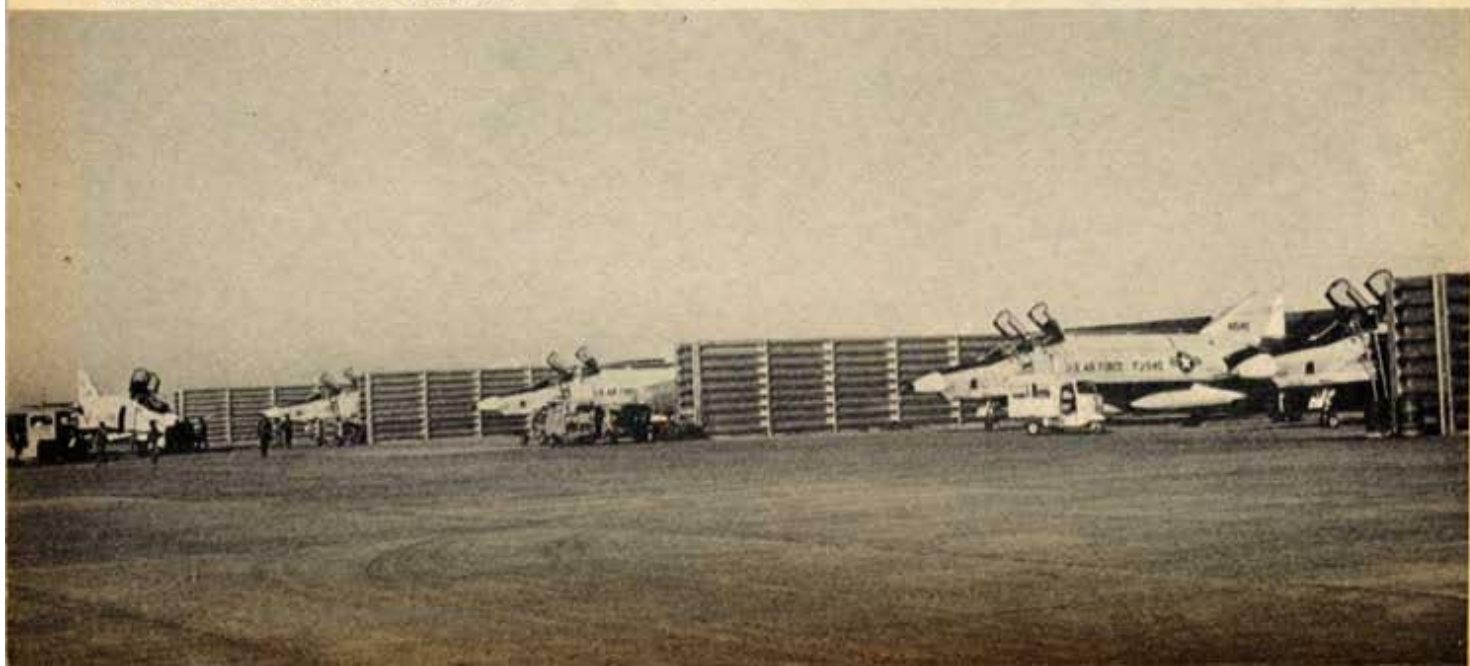


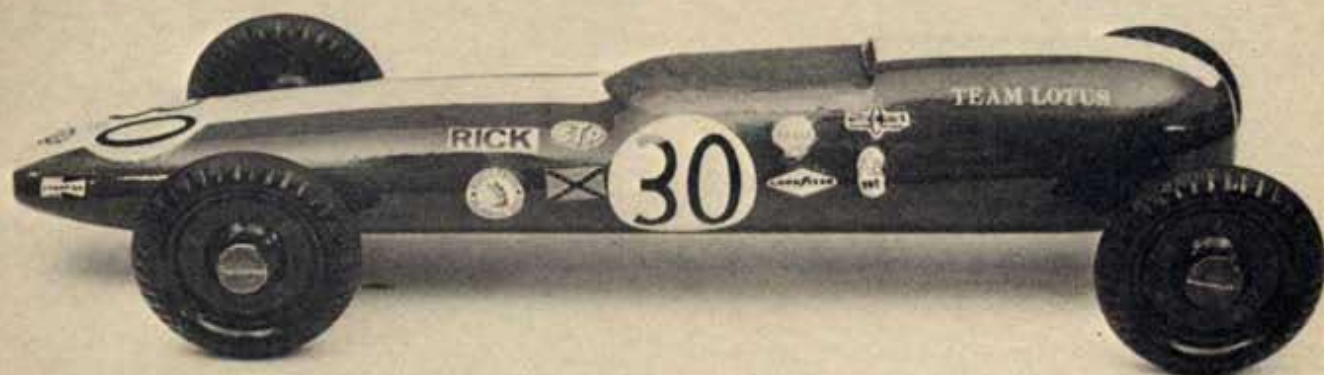
McDonnell is selling F4s with Rolls-Royce Spey engines and modified noses to the British Royal Navy known as F4Ks.

These views of the British F4K and Sopwith Camel contrast the aircraft of World War I to the aircraft of today.. Both are 1/72 scale.



The F4K is a modified version of American-based F4C Phantom II fighters to fit the confines of British aircraft carriers.





THE PINEWOOD DERBY CARS

At 75 cents per car, this has to be the least expensive way to race!

By Robert Schleicher

Many of us had our first introduction to model car racing with the gravity-propelled wooden racers in the Pinewood Derby events of the Cub Scouts, YMCA Indian Guides, PAL, or similar groups. These events stage one car against another in a drag race, on a descending ramp, with the fastest rolling car the victor. Speeds don't range into any fantastic mph figures, but when the car cross the finish line at the bottom of the race-track-ramp, victory is measured in fractions of an inch. Yes, you can "tune" one of these wooden wonders to be "faster than the average block," but it takes a bit of time and experience. Here, we offer the experience, you'll furnish the time.

Most frequently, a concours, or car show for beauty of finish, originality, and craftsmanship, is staged with the Pinewood Derby events. There's no witchcraft to getting a metal-like finish on a block of wood, but there are some shortcuts shown in the photos on these pages. If you arm yourself with some good quality sanding sealer, spray enamel like Testor's or Pactra model finishes, and a can of high gloss clear spray paint like Glosscote or such, you'll find the other bits of decals and detail

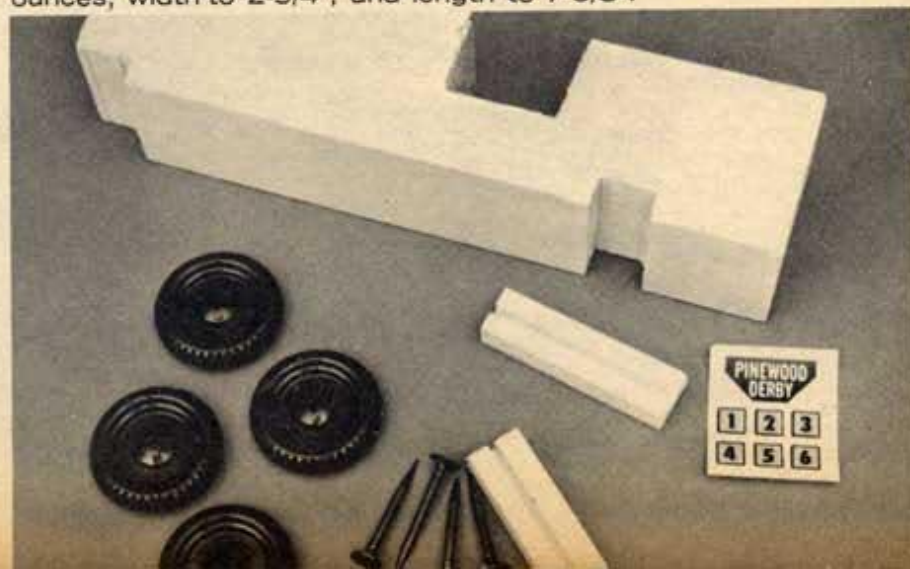
ideas among your left-over collection of ex-plastic model car kit parts and back issues of *Model Car & Science*. There is no reason why you can't use these same wood carving ideas and tips to make inexpensive wood bodies for slot racing cars of any scale from HO to 1/24. That's how the model car racers of the late 1950's started the hobby/sport of model car racing.

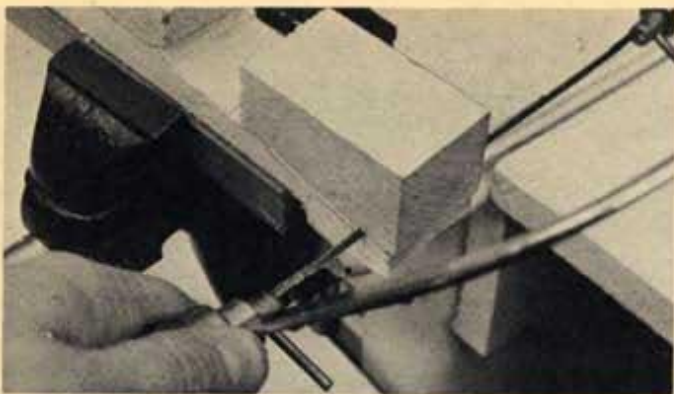
With the Pinewood Derby cars, we were concerned more with fitting a general car body shape to the wheelbase (axle spacing) of the pre-notched blocks of wood in the Pinewood Derby kits. If you want a truly scale car, you'll have to be a bit more careful in tracing

and transferring the plans from back issues.

Kits for the Pinewood Derby cars are sold at any department store that carries the official Boy Scouts of America uniforms and equipment, for about 50¢. You can make your own race track/ramp from a couple of 16 foot lengths of 1" x 12" lumber connected end-to-end with a hinge. 1/4" x 1/2" lath strips can be nailed and glued down to guide the cars down the "raceway." All in all, it's a far cry from the super-modified professional slot racing cars, but it's also a lot cheaper and a darn good way to get some newcomers interested in model car racing.

For less than a buck, you get the complete Pinewood Derby car kit including the rules/instructions limiting the car's weight to 5 ounces, width to 2-3/4", and length to 7-3/8".





Trace the pattern for the top and bottom plan views from plans in back issues, or custom draw your own. Keep top symmetrical. Glue only the side plan tracing to the pinewood block with rubber cement.

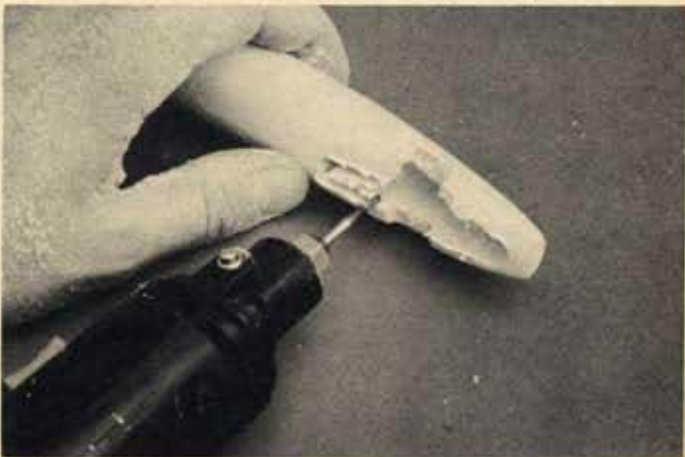
Clamp the block in a vise and, using the pasted-on plan as a guide, cut with coping saw.



Coping saw has removed the majority of the unneeded wood from block, speeding up work. Use a sharp pocket or hobby knife to round off the edges of the block into rough shape.



Coarse grade sandpaper will knock off the lumps left from carving. Check constantly to be sure that shape of both sides matches. Finish sand with fine sandpaper, wipe clean, and apply 3 coats of sanding sealer, sanding again after each coat of sealer has dried.



Inside of body must be hollowed out to allow addition of lead weight. Use a drill or a milling bit, in a Moto-Tool or electric drill; speeds up chore of hollowing body.



Clamp the nails supplied in the kit (most rules require use of these exact nails, and allow no washers) in a drill and polish with emery cloth. File off any burrs first.

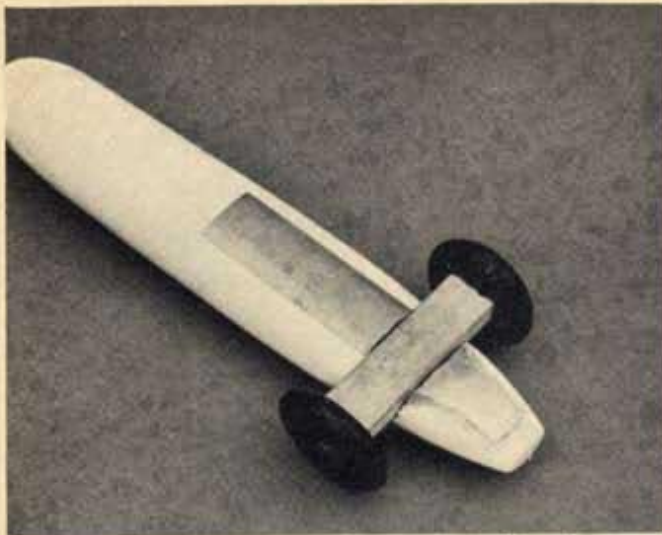
Gently file the inside of wheel to remove any sharp edges from holes. Use needle file.



Use a small screw and nut to clamp the wheel. Then chuck in drill to file tires edges smooth.

Epoxy nails that are dipped in light oil, into the slots in kit axle blocks.

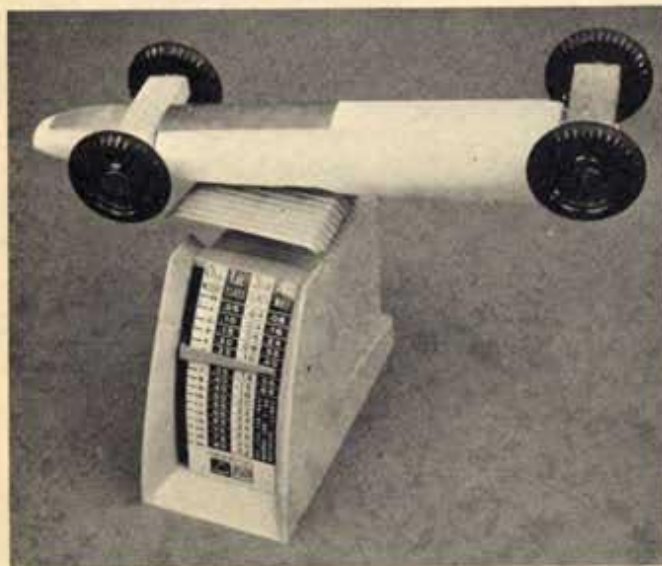




Allow epoxy to dry overnight, then fit axle carriers into their body notches.

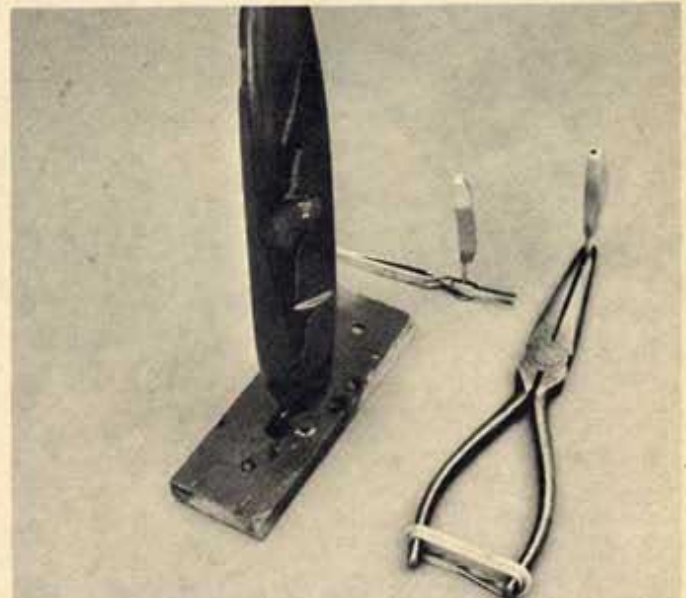
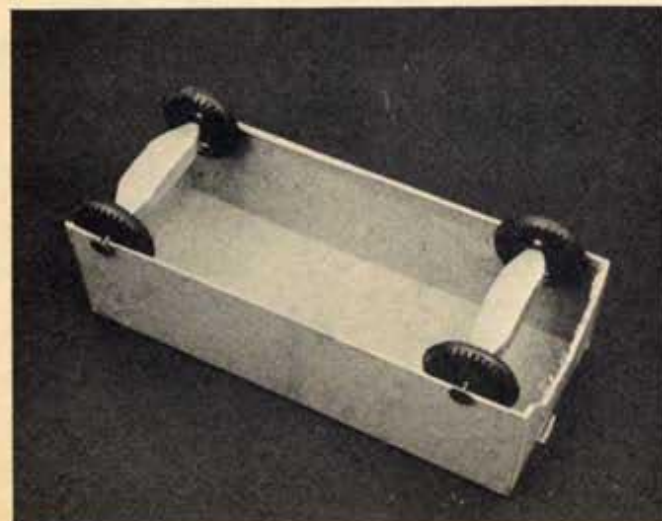


Fill cavity in body with molten lead solder, dripped from hot soldering iron, to bring weight of car and all parts to 4-3/4 ounces. File any parts of lead that extend below body so it is flush with body surface.



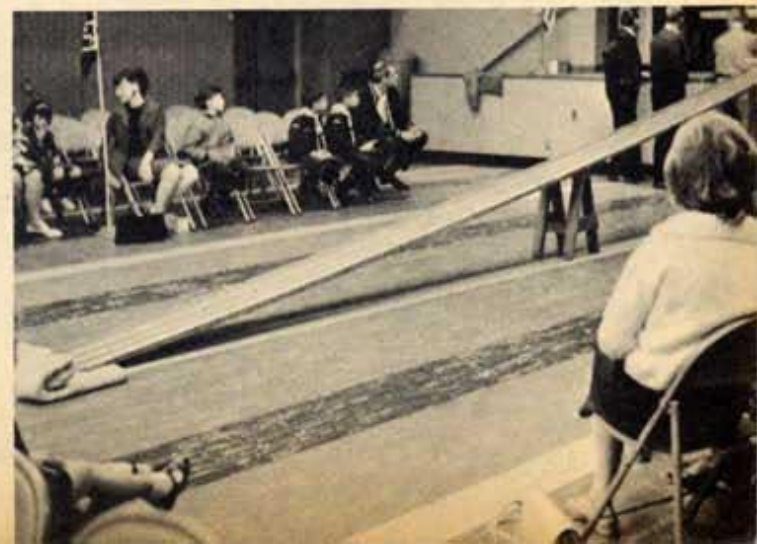
A piece of tin can can be cut to cover the lead-filled center opening and held in place with rubber cement. Weigh car and add any solder to make it a few grams short of 5 ounces.

A small box can be cut, using a razor blade and a drafting triangle, as a jig to hold car while axle carriers are glued to body. Push nails partially into axle blocks to hold them to assembly jig, then glue body over them with contact cement.



Car and axle carriers can be impaled on nails while two coats of enamel are sprayed on. Allow to dry for three days, then wet sand with #600 emery paper to perfect smoothness.

Long ramp is typical of the race tracks for these Pinewood Derby cars with 1/4 x 1/2 strips to keep cars from rolling off sides. A short board is held in front of two cars at top of incline and removed to start the race.



SPACE SHOWCASE

Display your space vehicle model
in this easy-to-build
shadow box.

APOLLO
OVER 20" HIGH
1/48 Scale Model Kit
LUNAR SPACECRAFT
Revell

The Revell Apollo Lunar Spacecraft kit has parts and instructions for duplicating the first U.S. man on the moon flight from lift-off to re-entry.

Authentically detailed models of the space vehicles, astronauts, and satellites of the United States space program are offered in easy-to-assemble kits. Some include operating features that allow duplication of the many aspects of a space mission, while others are realistic miniatures of the men and machines that are conquering the far reaches of space.

The more famous NASA vehicles are featured in the Revell kits such as the Gemini Astronauts and the complete Apollo Lunar Mission Spacecraft shown here. Other Revell rocket kits include either Mercury or Gemini space capsules, with some kits including the complete rocket and launch pad for either the Redstone or Atlas booster rockets. A series of two detailed booklets on "The Apollo Story," and "The Gemini Story," are available for 10¢ each from Revellbook, Dept. MCS, 4223 Glencoe Avenue, Venice,

California 90291. With these kits and books, you can reconstruct the entire history of America's manned space flights and get some insight as to what will happen in the future!

We won't dwell on the construction of the various spacecraft kits; the above booklets and pages of detailed instructions in each kit do an excellent job of that. What we will show you here, is what to do with these fabulous kits

AFTER they are finished. The picture-framed rockets in the photos are resting in a form of shadow box that provides a realistic setting and a place of display for space program models. Simply, the display is a velveteen-covered box, with a picture frame to set it off as a useful piece of furniture to either hang on a wall or sit on a desk or tabletop. The space program models can be decorative as well as fun to build!





Command Module portion of Apollo kit includes three astronaut figures assemblies into the

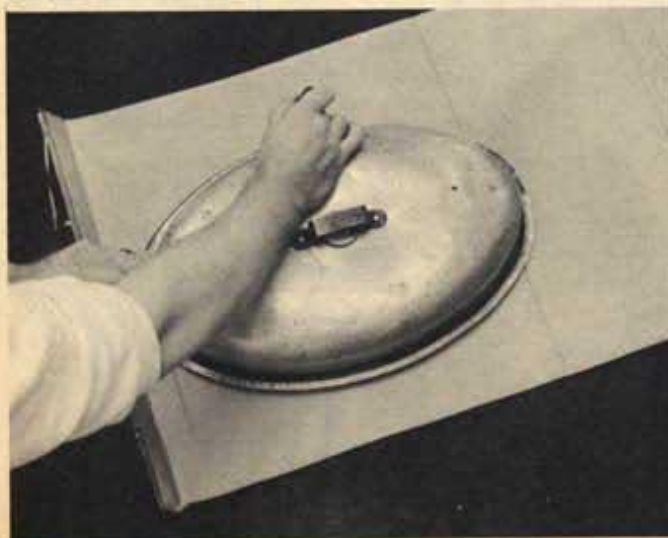


cone-shaped module pictured. Also shown is the "LES" or "Launch Escape System."



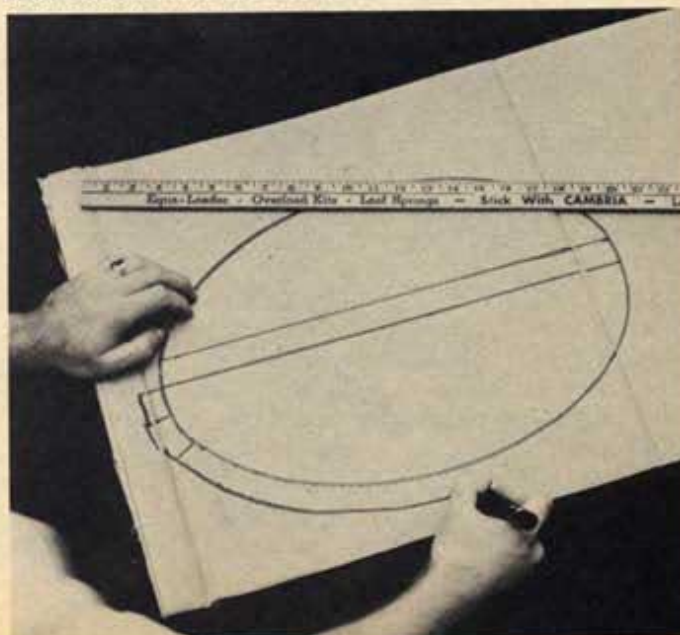
Largest component of the Apollo kit is the LM Adapter Section which houses the Lunar Module. Service Module connects the LM Adapter to the Command Module.

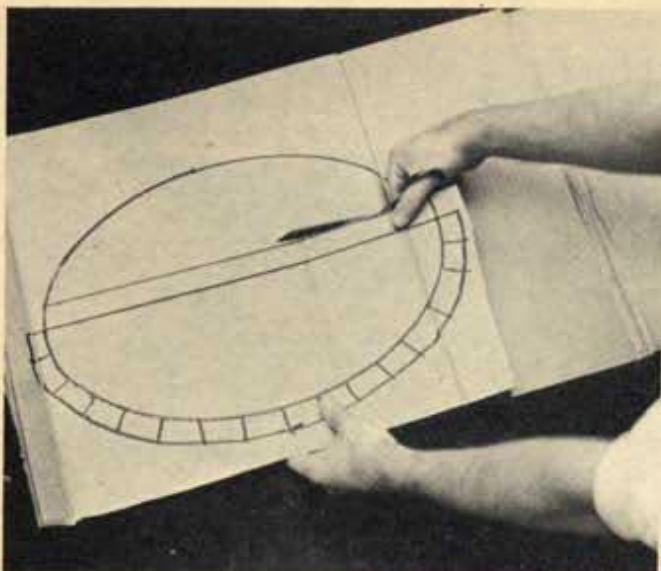
Use a roaster lid as a pattern for the ends of the shadow box. Trace onto the corrugated cardboard from tissue box.



Display shadow box is made from a picture frame (in a style to suit your room) with a $12\frac{1}{2} \times 23\frac{1}{2}$ " opening, a bathroom tissue carton, 2 yards of black velveteen, masking tape, and staples.

Sides should be 24" long, 6" deep. Trace lid and add second line freehand as shown.

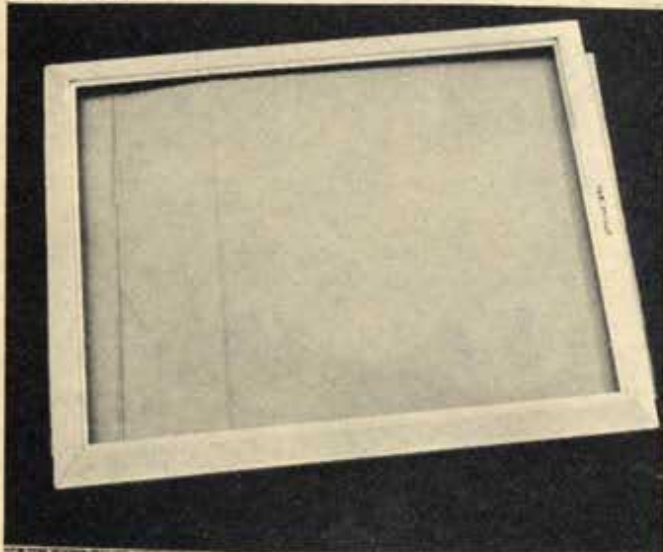




Add a flap across center and cut out with heavy scissors.

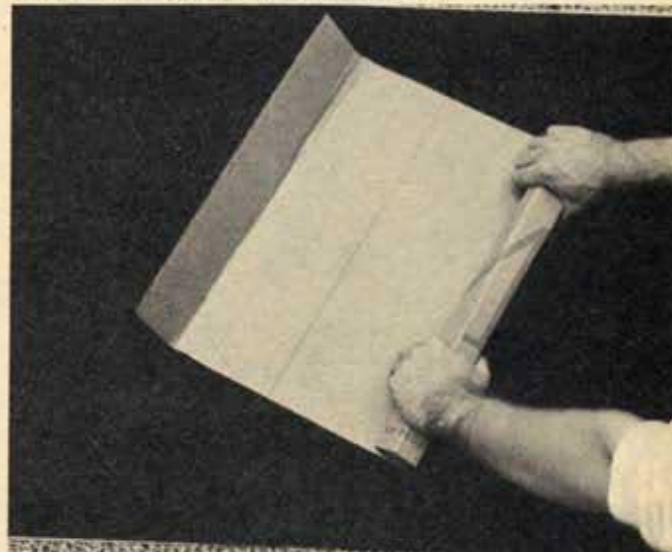


Cut and fold each of the two sides to the shape and angles pictured here.



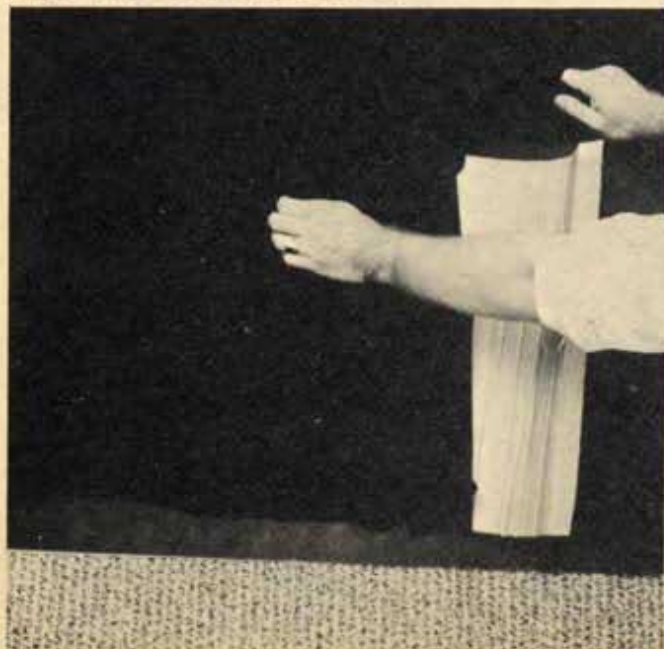
Back of shadow box is cut 18"x36".

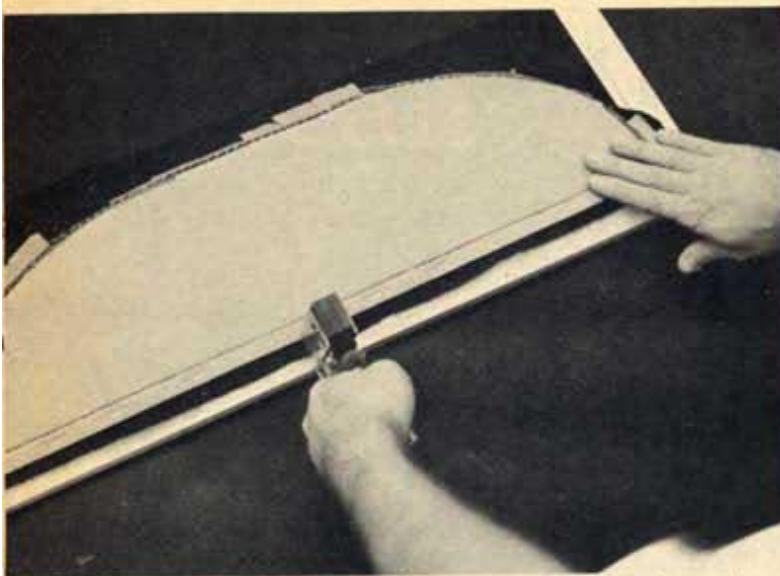
Cut velveteen into three pieces, each at least 2" larger than back and 2 sides.



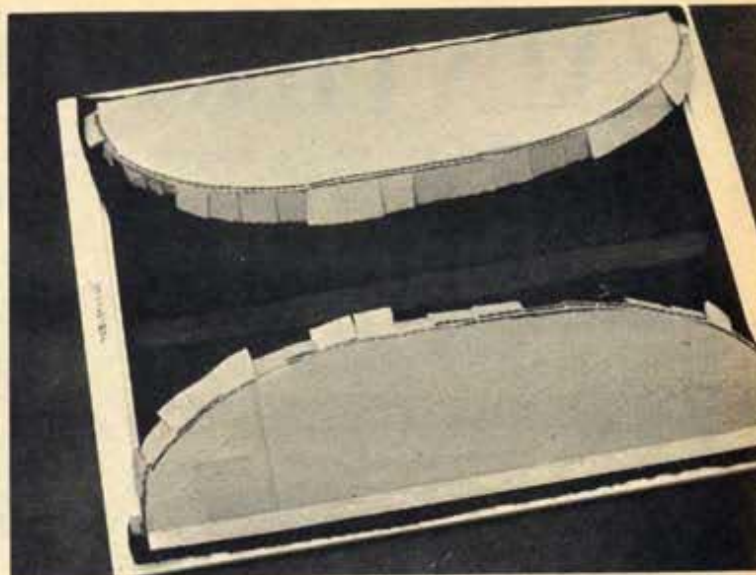
Roll the back to form contour to fit sides.

Place velveteen over box back and fold one inch over each side. Tape folds to back.

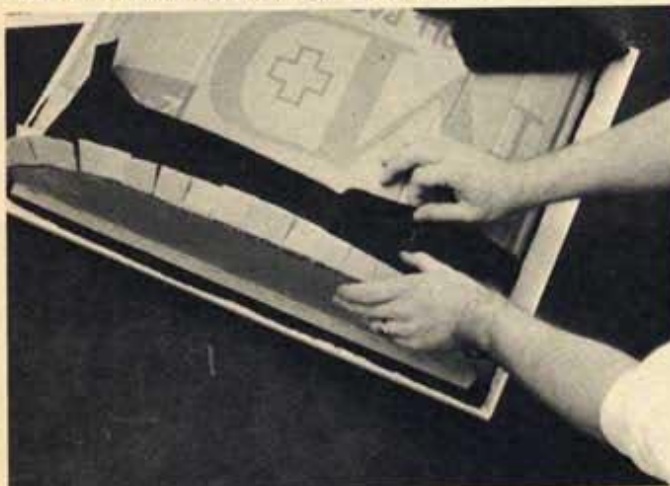




Sandwich velveteen between side panels and side of frame and staple as shown.



Staple opposite side panel and velveteen.



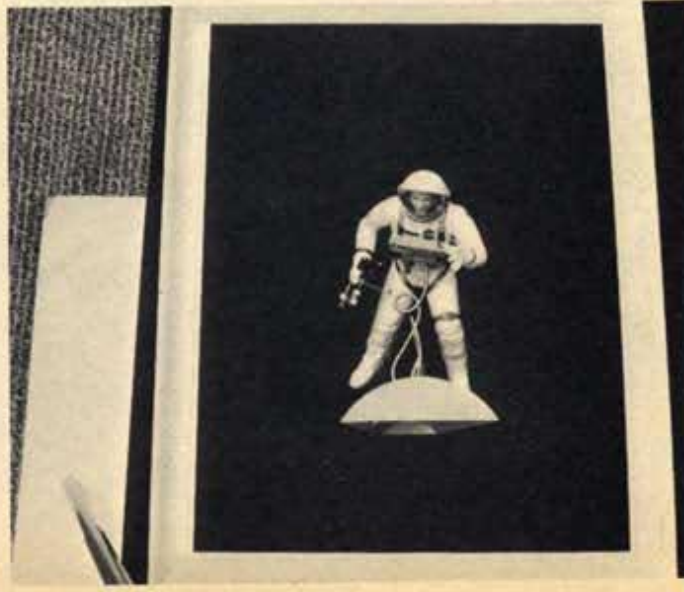
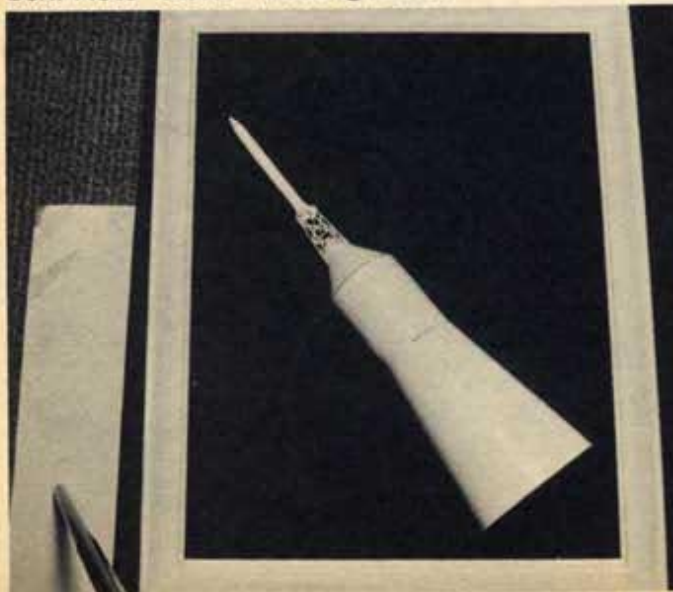
Velveteen-covered back is stapled to top and bottom of frame to bulge back about 6" as shown. Side tabs are now folded over back, excess velveteen trimmed away, and tabs taped or glued to back.
Add a wire hanger or wood stand to support frame on wall or desk top.

Complete Apollo kit just fits framed shadow box. Note "stars" in background.



Rhinestone "junk" jewelry like this can be purchased in a variety store for a dollar or so. Pry out stones and glue to velveteen to simulate stars in outer space.

Most space models can be positioned in a variety of different poses such as this Revell Gemini Astronaut. When you are satisfied with position, tie down with a single strand of picture-hanging wire.



PAINTING Part I

The first in a series of informative articles on perfection painting

By Ben Millsbaugh

A lot of model builders will admit that their biggest downfall comes when the paint is applied. This is one of the reasons that clear plastic bodies are so popular in slot racing. They're easy to paint. The editor has given me permission to "spill the beans" in painting technique. Many expert modelers are not willing to give up their secrets in painting but so many "slips" have been made in

various articles that most painting secrets are now out in the open.

My background in painting real cars has paid off abundantly in model painting. Some exotic techniques are far easier to use on models than on the real cars. You also have one great advantage, if you mess one up it doesn't cost so much.

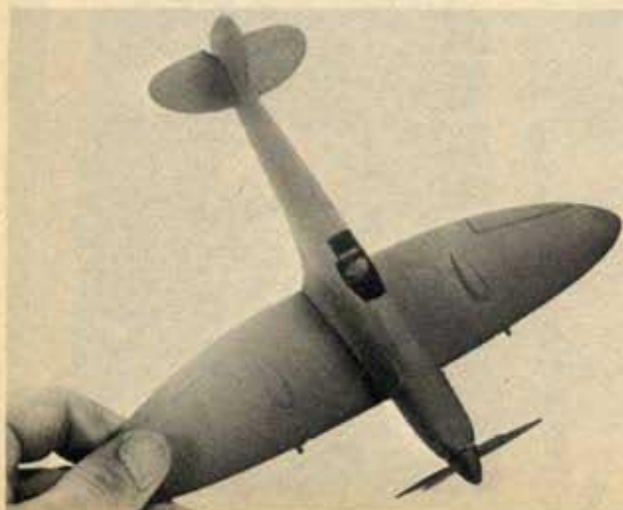
My biggest secret in beautiful

painting is not in application but in preparation. Dust is the biggest enemy, next to runs, in model painting. Runs can be eliminated for the most part by the use of lacquers. Dust on the other hand is a problem to the best of painters. Painting is just like lawn care, anyone can just water and mow the grass but real golf-course-green lawns require care and skill. These articles are going to give you a lot of knowledge on how to paint. Don't take just the frosting and leave the cake. Somewhere along the line you will use every part of this article, especially when you are going for the show trophies. Enough said, let's get underway with the how-to.

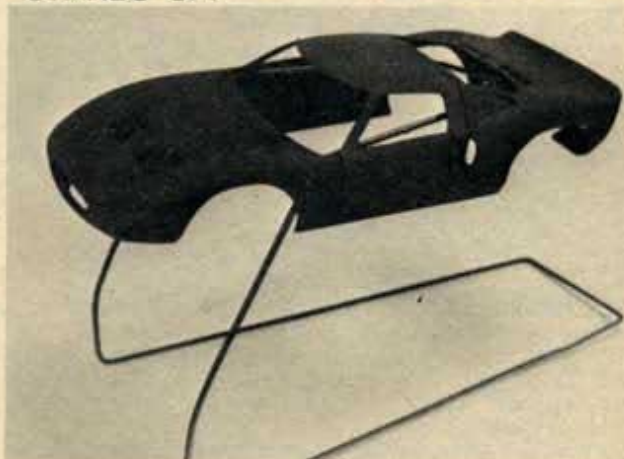
Here is the secret of secrets in good painting techniques. I bought an old foot locker some years back and after painting, I put my model in this box and seal it. Before putting the model in the box, I wipe the box down with a wet rag.



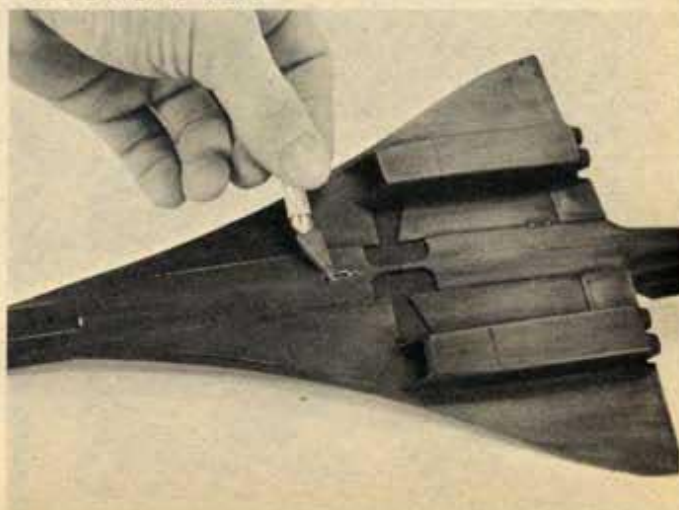
This is the poorest technique you can use for painting. First, you will spray your thumb and also you will leave an oily thumb-print on the plastic. Paint will not stick to oil. If the area has already been painted, I don't need to tell you about that mess!

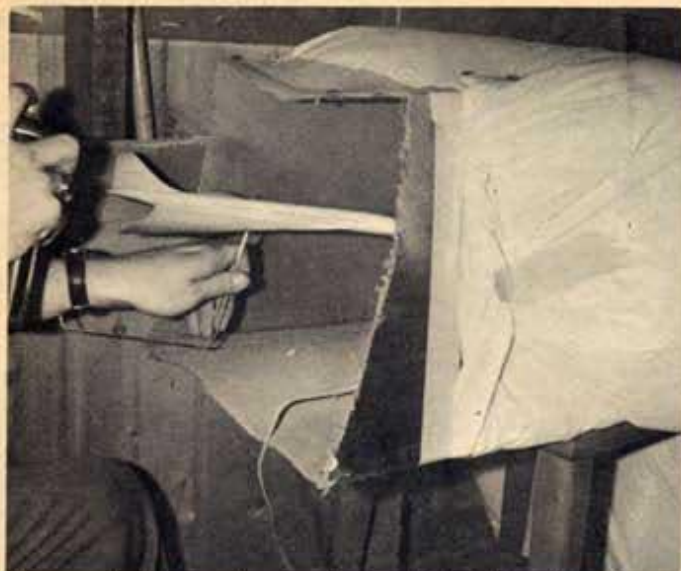


Stands are a necessity to keep the fingers and dust particles out of the paint. These stands should be made before you are ready to paint. The stand is usually, for a car, made out of a coat hanger. Just make sure that your stand STANDS UP.



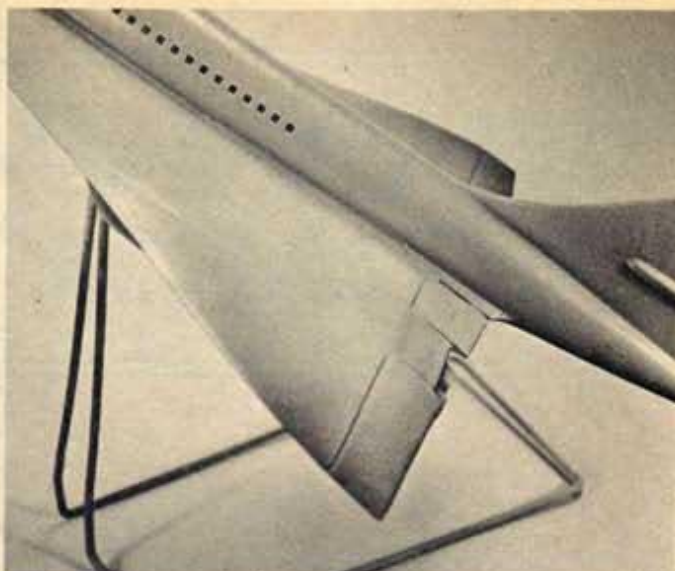
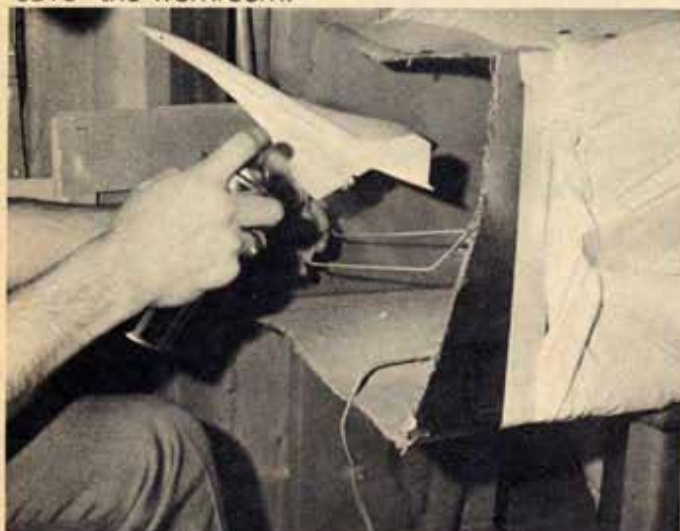
Planes sometimes are hard to hold on a stand. Usually, if the plane isn't equipped with a stand (such as Aurora's), I will cut a round hole in the bottom of the fuselage to take a stand made of coathanger wire. An X-Acto knife twisted in a circle works well.





The coat hanger is so shaped that it will go up through the hole, yet support the model when placed in the foot locker, after spraying, to dry. Note here that the base of the stand extends back up my arm behind my watch. It is counter-balanced to the weight of the airplane.

Here is something else you should take care of before painting. This is a spray-booth set up with a fan to draw out the paint into a filter. If you're going to build a lot of models, this will really "save" the workshop.



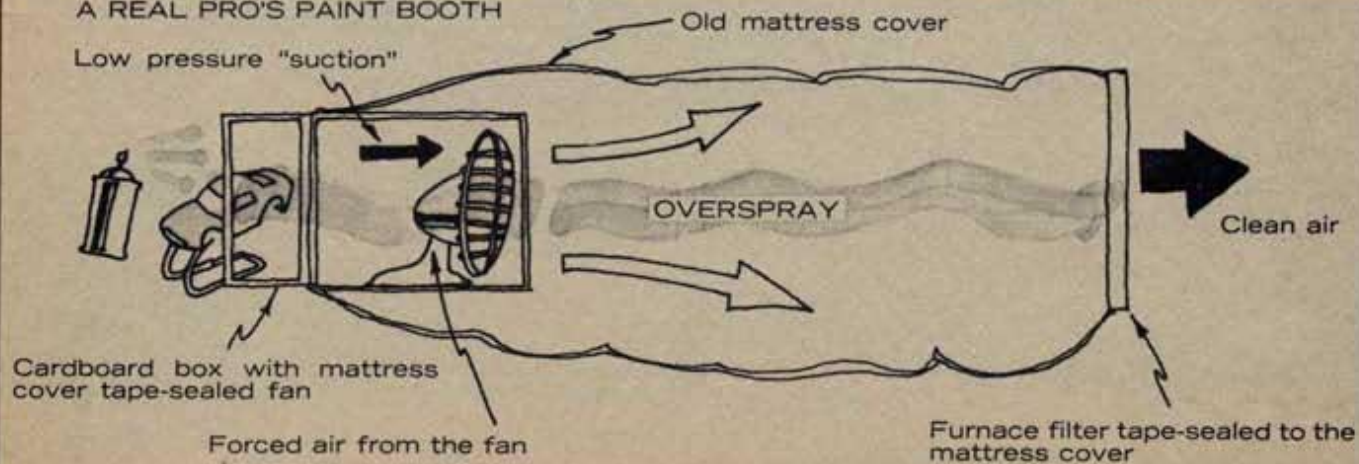
When the plane is set aside to dry it will perch on the stand somewhat like this.

We have dealt mostly with the dust and stand problems encountered in model painting. Remember to get the best results try the following:

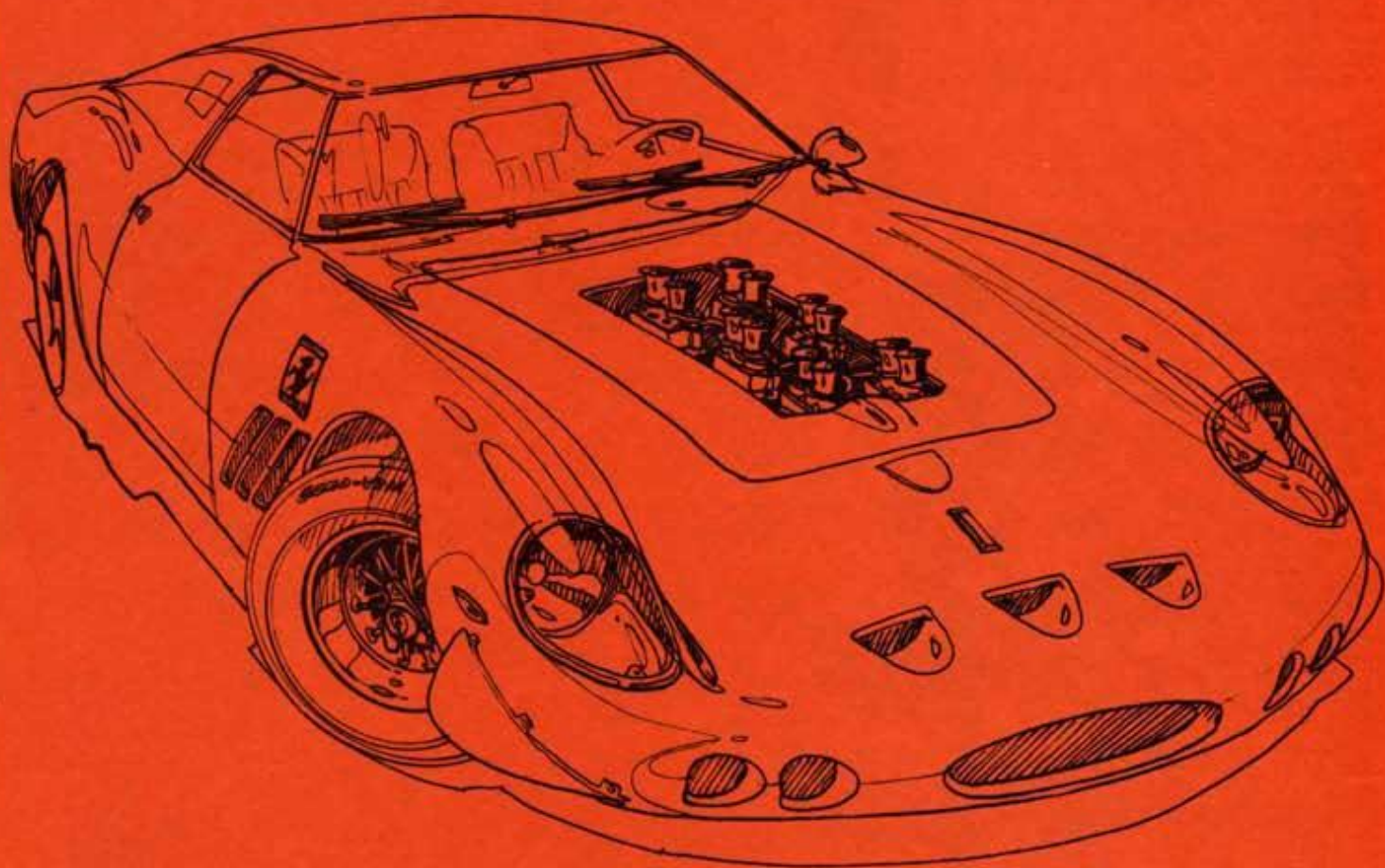
1. Get an old footlocker and use it for the final drying "room."
2. Make sure you have a good solid stand to hold the model while painting.
3. Fix a paint booth of some sort to take the overspray. The best kind would use a fan to draw the overspray into a filter such as shown in the drawing. A long cardboard box with a fan setting in one end and a furnace filter at the other end is fairly adequate.

A REAL PRO'S PAINT BOOTH

Low pressure "suction"



MODEL CAR & TRACK



Number three in our series on
making your 1/32 car quicker.

MODIFYING THE HOME SET CARS



The Eldon home set cars are designed with the rough and tumble world of the very young home racer in mind, with the lowest prices in the home set field. We will refrain from discussing whether this low cost is in fact a bargain or not, and assume you already have an Eldon home set and want to know how to improve the looks and performance of the cars.

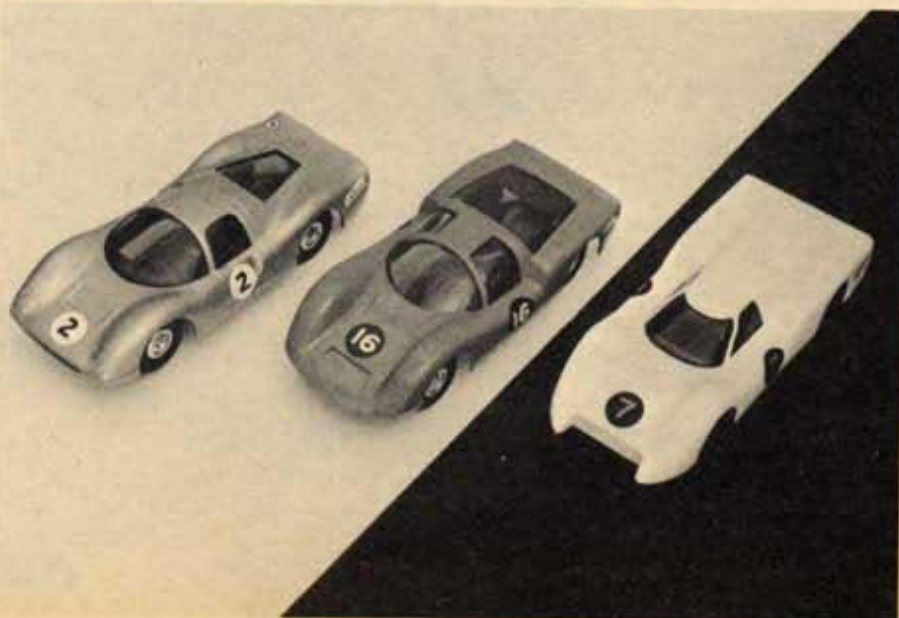
We would advise a series of chassis modifications including: increasing the front wheel spacing, adding some wider, foam rubber tires and new wheels to the back, altering the gear ratio, and lowering both the chassis and body as much as possible. Like many modification series, you can take it a step at a time, or do the whole thing at once. If you are a newcomer to model car building, we would recommend you leave the motor alone.

We deliberately picked the Eldon Carrera for this article as it

is one of Eldon's better scaled and detailed bodies. The car in the photos is painted with a wild series

of red, white, and blue bands to match the full size Carrera raced in the 1966 Can Am races.

Ferrari P2, Porsche Carrera 6, and Ford J car are typical of the 1/32 scale ready-to-run cars furnished in Eldon sets.

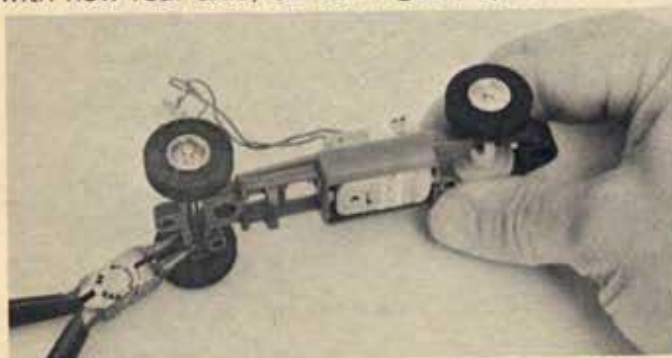




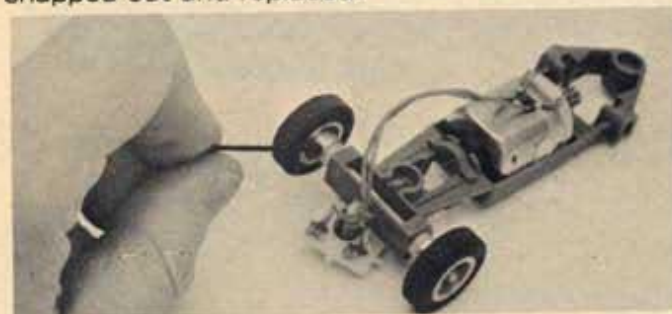
Latest in Cox's great line of American Mag wheels, #4675, front, and #4638, rear, are used with new rear axle, 32-tooth gear, spacers.



Eldon chassis is tough nylon with adjustable wheelbase; is used in all their 1/32's. Motor is rated 6 volt, is reliable and quick.



Use needle nosed pliers to pry off front wheels and tires. Rear axle, tire, gear unit can merely be snapped out and replaced.



The #4675 Cox front wheels set screw to the smoothed-off Eldon axle, wider spacing.

Crimp top of pickup to keep it from falling from modified chassis bracket.



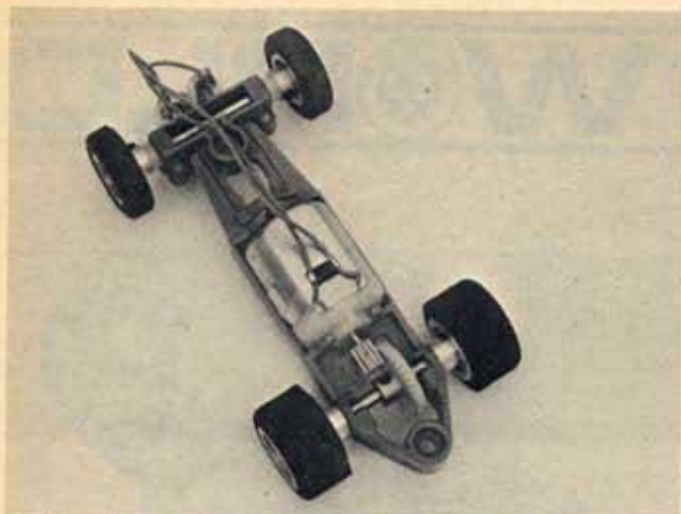
Chuck the Eldon front axle in an electric drill, turn it on, and file off ridges.



Cut about 1/16" from top of pickup bracket, add equal-size spacer washer between pickup and bracket so it will extend deeper into slot.

Fit short length of threaded axle into electric drill, then Cox #4638 wheel, to slice width down from 5/8" to 1/2".





Real axle supports must be trimmed away so they are flush with sides of frame. Use axle with exactly 15/16" of unthreaded area so wheels will not need lock nuts.



Trim about 1/8" from each body mounting post and enlarge wheel openings to clear tires with lowered body.

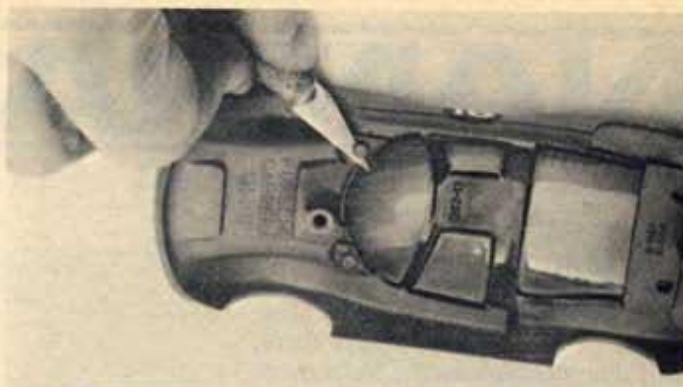


Spray body with two coats of AMT black lacquer primer, and sand smooth.

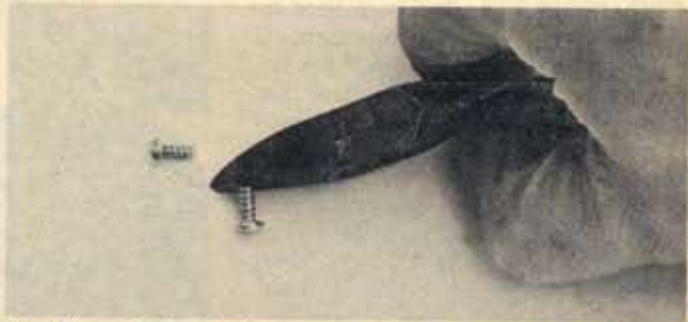
Use red and blue striping tape, 1/32" wide, to mark edges of colors then brush-paint red and blue with enamel.

Decals from a Monogram GTO/LM kit were used for numbers with the necessary thin black edging. Black ink outlines body seams. Tinted windows make driver optional.

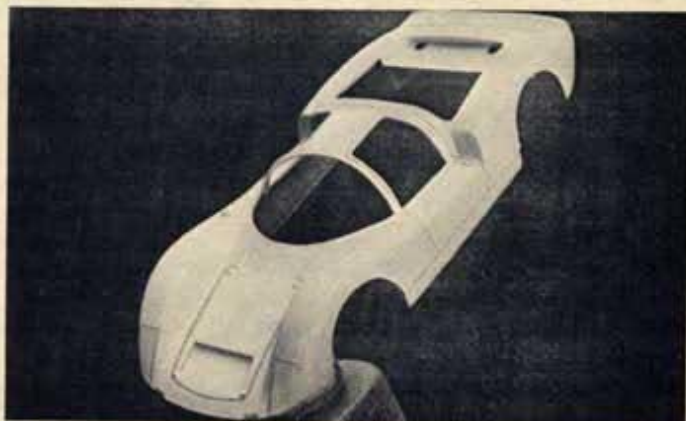
A piece of postcard, painted flat black, masks chassis, helps hide lack of driver. On full-size car, American Mag wheels were painted white, number 32 used.



Trim off plastic tabs that hold window piece into body. Eldon tints their windows a realistic dark green.



Shorten both body mounting screws so they won't break thru body when tightened down.



To achieve the way out and wild red/white/blue paint scheme, body is sprayed with AMT white lacquer.



NAMRA WORLD

THE FIRST 500 INVITATIONAL

By all accounts, the first NAMRA 500 Invitational had to be the premier 1/32 race of the year. Most of the best of NAMRA were there, and this included entries from overseas as well as from several different states.

The invitation list was limited to 150 carefully selected members to enable this event to represent a cross-section of all of NAMRA's regions and foreign groups. And late word just in from the program committee is that two cars just arrived from non-members in England.

Some of the most interesting cars arrived from some of our Midwestern members, brought to the meet by Joe Haines from the Du-page club in Chicago. Among these were Joe's own Lola T-70 Can-Am car. This car featured a three-piece chassis with steering which we are informed is just about standard in the Midwest now, and a motor setup referred to as a "side-saddle sidewinder" with adjustable rear end.

The Lotus 19 built by Glen Seegers and driven by Joe Haines was also a steering car with three-piece chassis with sidewinder Hemi power.

From Roy Moody of 32RA in Chicago, another Lola T-70 with "side-saddle sidewinder" setup and a two-piece chassis with steering. Powering this one was a hefty 26D can. From Spain came the Porsche 904 of Manuel Fernandez powered by a Pittman 196/65x. From Hong Kong, the winner of our award for farthest distance traveled, the Ferrari 250 GTO of Richard Eng. A Chaparral 2E came from the stable of Ramon L. Lacomba of Puerto Rico. Another entry was a monster Chevy Gran Sport from Francisco Hidalgo in France. Two more award winners came from South Africa, the Noel Pietersen Ford Mk II that took best handling for a foreign entry, and the Andrew Chatterall Ford J car took Foreign Concours.

It was interesting to note that all of the foreign entries ran pan-type chassis with the exception of the cars from Puerto Rico, Spain, France and Hong Kong. The 16D size can was king, and inline seemed the way to go. The most comfortable cars seemed by popular opinion to be the multi-section chassis cars



First NAMRA 500 winner Ned Wagner being presented his award by Charles Cressi NAMRA Chairman, and Jose Rodriguez, Jr. NAMRA Secretary.

from the Midwest but unfortunately they were all down on power, including the Moody Lola T-70 that made the semi-finals with the capable driving of proxy driver Chip Chisena.

Concours for domestic entries was a tight point battle between the Peter McCarthy gleaming white Ferrari Can-Am car, the Haines/Mazetta-built Lola T-70 Mk III coupe and the winning Ford GT with full interior and opening doors by Jose Rodriguez, Jr. The driver figure in the winning car was handcarved and detailed down to shoelaces. Power was supplied by a small sidewinder under the engine compartment.

If an award had to be given for the biggest car of the meet it would have to be split three ways between the Honkers of Robin Snyder, Larry Watson and Nick Post, all three of which were just as fast as they were big.

The machinery that qualified for the main event featured the combination rod and strip chassis of Sandy Gross who went the hinged body mount route that first saw light on the West Coast, and the three sliding plate chassis of Charles Cressi, Ned Wagner and current NAMRA Champion Tom Palisi Jr. And it

proved to be a turn mashall's nightmare with all four cars being bright red Ferrari P3's.

Unfortunately, expected threats Howard Ursaner, Roy Wong, current NAMRA points leader, and several other did not make it, arriving too late for Technical Inspection. The race was held on the ultra smooth long Island Miniature Electric Racing Association track. This is a 170 foot 1/32 layout that must rank as one of the finest anywhere. The cars were fast and handsome. And the magnificent silver bowl promises to be the most coveted prize in all slot racing.

Racing starts early for NAMRA and at 9 a.m. most of the drivers were there. Sandy Gross, Ned Wagner, Charlie Cressi and Steve Nielsen were among the early arrivals. Coming out of a six month layoff, the 1967 NAMRA champion Tom Palisi Jr. looked like he hadn't lost any of his winning form. The big disappointment was the absence of Howie Ursaner and Roy Wong, current point champion who arrived too late for tech inspection.

Practice was the usual mixture of anxiety, dismay, hope, despair and triumph. Ned Wagner blew the motor in his fast Lola T-70 and had to

switch to his back-up car. Sandy Gross was seen talking to his car in dark corners of the room. Joe Haines, out of Chicago, was working hard to master the sweep with his sidewinder Lotus 19. Nick Post was very happy with a handling Honker. Chip Chisena was driving Chicagoan Roy Moody's very pretty Lola T-70 with sidewinder 26D, and really getting through the corners with it. With Tech over, the "nervous" part of the day got under way. As in all NAMRA races each driver does 3 minutes on each of the lanes. Laps and segments of his best three are totaled to decide the 12 qualifying positions.

It became apparent right off that anything less than 17 plus laps in a lane would put you out of it. Ned Wagner told of things to come when he put together three 18 lap heats. Qualifying ended with Wagner as top man followed by Cressi, Gross and Palisi, Jr. going for the big silver pot in the 500. Qualifying for the semi-final were Larry Watson, Honker; Nick Post, Honker; Chip Chisena, Moody Lola; and Fred Harsh, Ferrari P3.

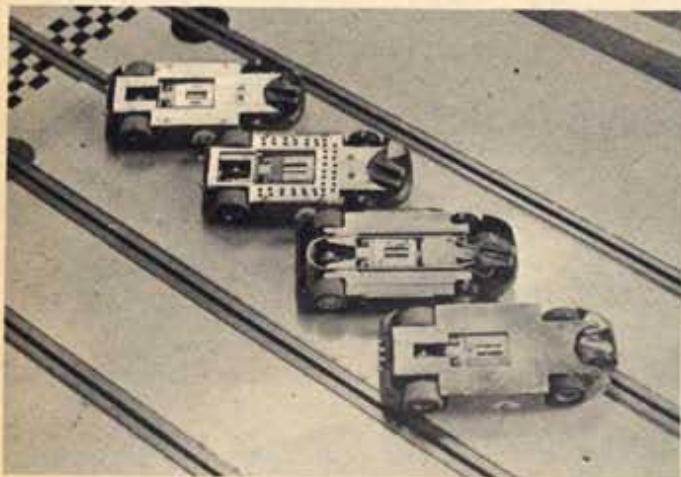
Making it to the consie were Steve Nielsen, Lola T-70; Pete McCarthy, Can-Am Ferrari; Tom Palisi Sr., Chaparral 2F; and John Dillon, Ferrari P4.

The 100 lap consie saw all four cars get into the first turn and down the sweep side by side. By lap 5 Nielsen had taken a 6 second lead and looked like he was going all the way. By lap 25, hard-luck Nielsen was dead on the track with a broken lead wire. A quick trip to the bench got him back in, 10 laps back. Meanwhile back at the pack there was a real ding-dong going on. Dillon, McCarthy and Palisi were having a race-in, and for 25 laps the lead was swapped 5 times. At lap 60 Palisi and McCarthy got all thumbs and began bouncing off the walls, letting Dillon into a 2 lap advantage. Palisi got second for keeps on lap 80 as McCarthy started doing the Watusi in the turns. With 5 laps to go, Dillon, who had been going very fast, began to lose his brakes due to a badly worn pickup brush. In the meantime Palisi was going like hammers and had gotten back in the same lap with Dillon

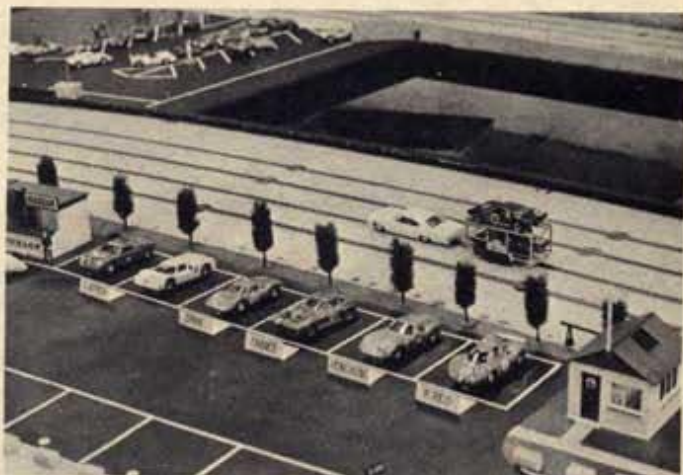
when it ended. The order of finish was Dillon, Palisi, McCarthy and Nielsen.

The 140 lap semi-final was one of those Perils of Pauline races where the outcome is in doubt right up to the last lap. Lining up for this one was Watson's Honker, Post's, Honker, Chisena's T-70 and Harsh's P3. The start was the usual mad scramble for the first turn, and after lap 1 the order was Watson, Harsh, Chisena and Post. These positions held for 25 laps with Harsh and Chisena trading second and third almost every lap and moving up on Watson. At this point Watson came out of the slot on the dangerous sweep, slid along the low retaining wall and clouted the barrier at the sharp right hander. This shunt did dreadful things to his guide shoe putting him well back of the pack.

From this point on Harsh and Chisena got locked into one of the closest nose to tail races seen in a long time. Harsh was never more than 6 seconds ahead at any time during those 115 laps. The P3 had superior speed and jump, but the fantastic handling of Chisena's T-70



Main event chassis, top to bottom, Wagner, Cressi, Gross and Palisi, all under P3s.



Some of the foreign entries that made it. In the background, the eventual Concours winner being trailed to the paddock.

A view from the first turn showing the sweeper that got so many cars in the prime of life.

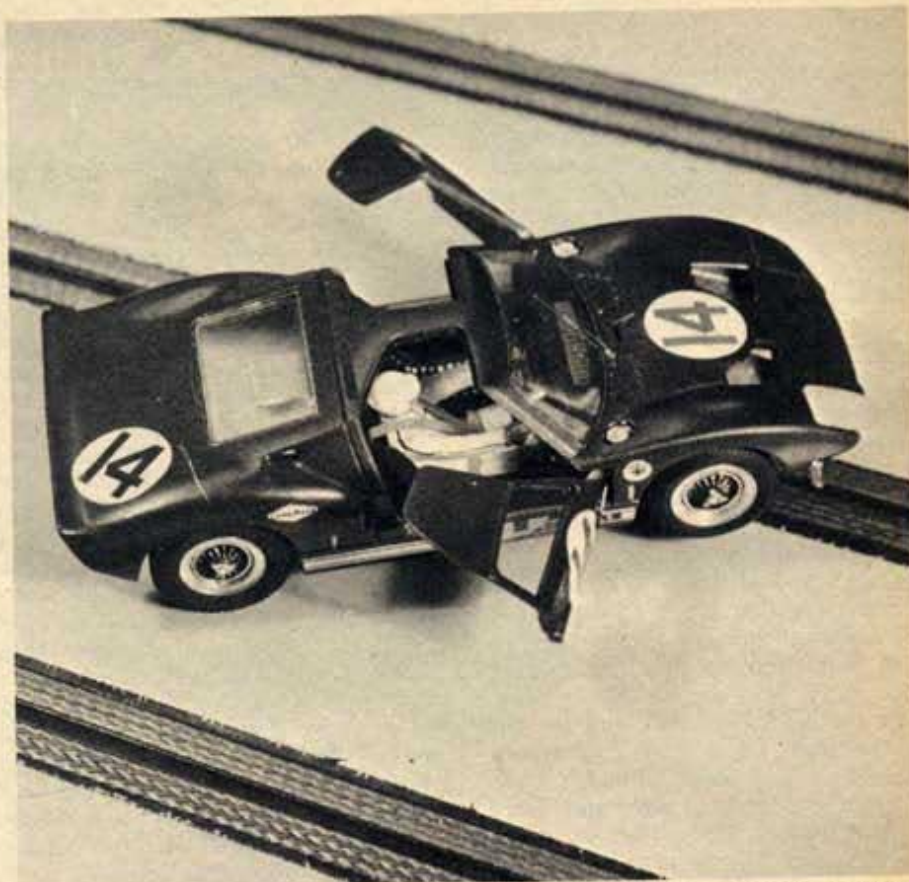


kept him right in there. On lap 79 Chisena passed Harsh in the short twisty section and held the lead for 4 laps. The superior speed of the Ferrari was a little too much and Harsh got the lead back on lap 83. About this time, Post passed Watson for third place two and a half laps back of the leaders.

Chisena kept up the pressure and took first momentarily on lap 84. Harsh got it back in the straight and the order stayed that way to the finish. As Harsh crossed the line for his 140th lap Chisena was a scant 4.25 seconds back. Some racing! At last the Big One was at hand. Barring the unforeseen this had to be a predictable race. On his qualifying alone Ned Wagner had to be the odds-on favorite. Ned is recognized in the East as the finest 1/32 driver in anyone's memory when he has the right car. This time, he had the right car. His driving style is unique in that he brakes sooner than most of the good drivers and then blips the car right up to and through the turns.

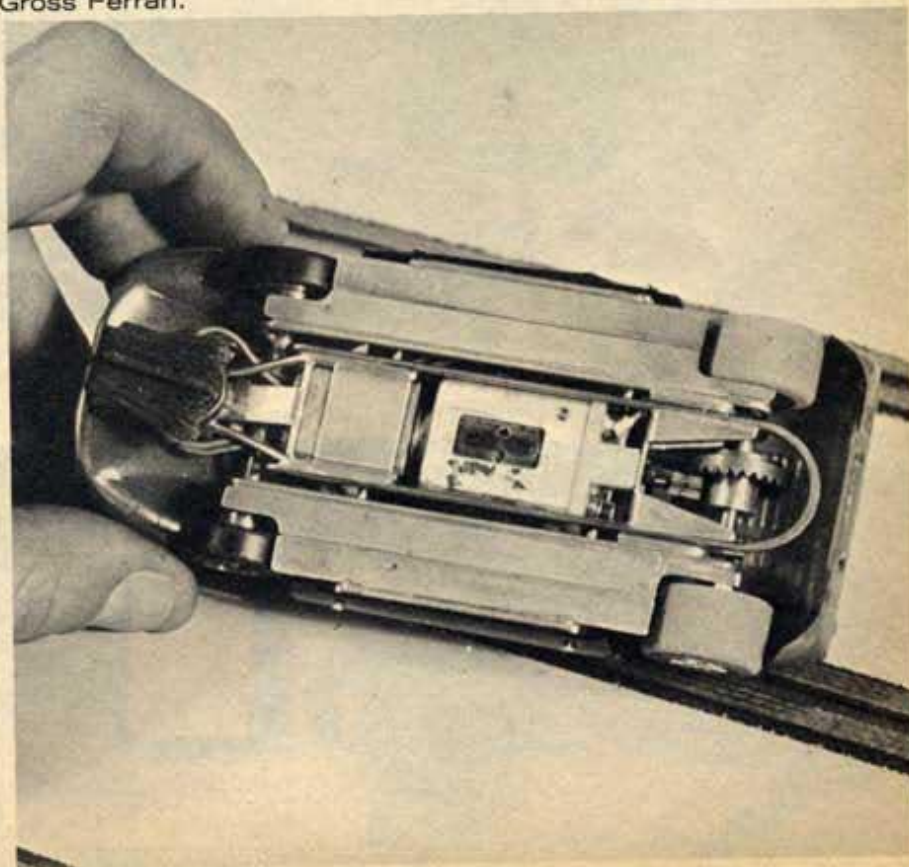
The 500 was a symphony in red with the four identical Ferrari P3s of Wagner, Cressi, Gross and Palisi Jr. lined up on the grid. How they got through that first lap without losing sight of their cars is a wonder. Poor Tom Palisi found his all alone in the first lap with a broken lead wire. Repairs cost him 15 laps and the race. The others stuck close together for a few laps but Wagner was soon out and away, going like blazes. With Wagner completely dominating first spot the real center of interest focused on the duel between Cressi and Gross. Ol' Charlie gives 20 years away to the younger Gross, but gives away nothing on the track. These two changed places 7 times for 190 laps. On lap 191 Gross popped the slot and got into another lane. This sent him smartly into the wall. A bent rear axle slowed him to a limp the rest of the way. Cressi took the second spot easily. And the finish would have brought tears to Enzo's old eyes with all four cars crossing the line Ferraris.

Ned Wagner drove an incredible race, not only lapping the second place car 7 times, but in 200 laps of all-out running, came out of the slot only 4 times. Everyone present knew they had seen a remarkable individual performance, and the name Edward (Ned) E. Wagner, as the first to be engraved on the perpetual 500 Trophy, is one of slot racing distinction.



Concours winner, Ford GT with interior, full driver and opening doors.

One type of eastern chassis with West Coast influence, the Gross Ferrari.



Consie

1. John Dillon	Ferrari P4	517 rw	USA
2. Tom Palisi, Sr.	Chaparral 2F	16D rw	USA
3. Pete McCarthy	Ferrari P3	16D rw	USA
4. Steve Nielsen	Lola T-70	517 rw	USA

Semi-final

1. Fred Harsh	Ferrari P3	16D rw	USA
*2. Chip Chisena	Lola T-70	26D rw	USA
3. Nick Post	Honker	16D rw	USA
4. Larry Watson	Honker	517 rw	USA

Main

1. Ned Wagner	Ferrari P3	16D rw	USA
2. Charles Cressi	Ferrari P3	16D rw	USA
3. Sandy Gross	Ferrari P3	16D rw	USA
4. Tom Palisi, Jr.	Ferrari P3	16D rw	USA

* Roy Moody builder/owner

Concours

Jose Rodriguez, Jr.	Ford GT	Romford rw	USA
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Concours Foreign

Andrew Catterall	Ford J	507 rw	S. Africa
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Best place Foreign

Noel Pietersen	Ford Mk II	16D rw	S. Africa
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Farthest distance traveled (car)

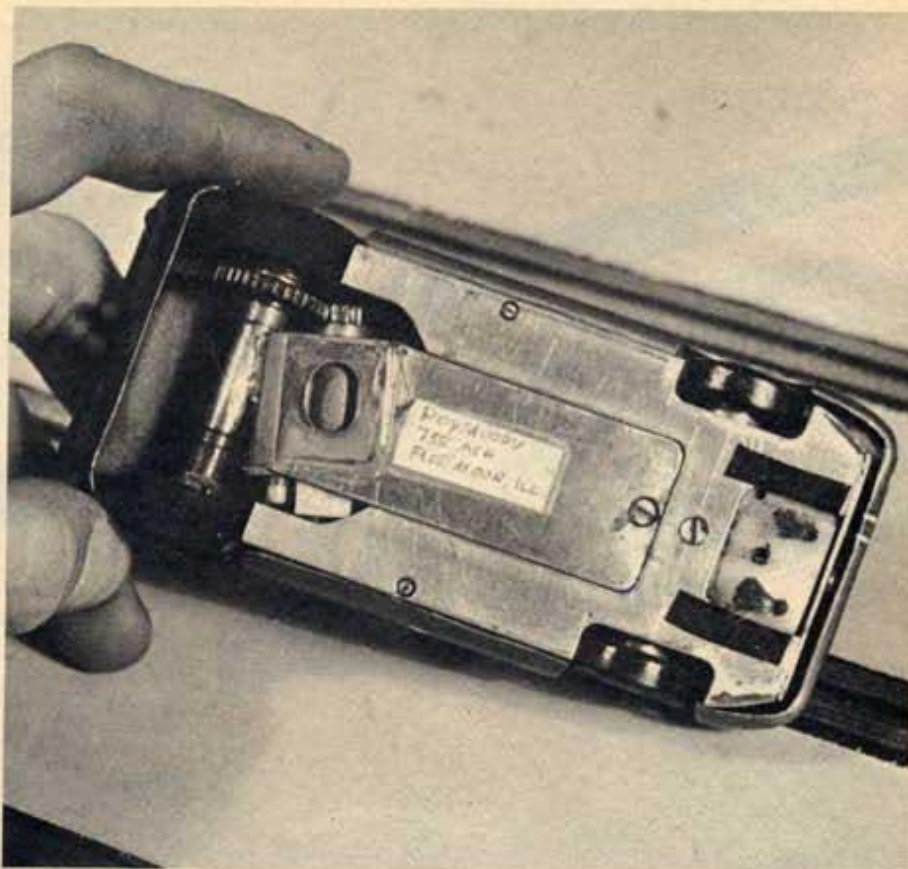
Richard Eng	Ferrari 250	196/65x	Hong Kong
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Farthest distance traveled (entrant)

Joe Haines	Lola T-70	517 rw	USA
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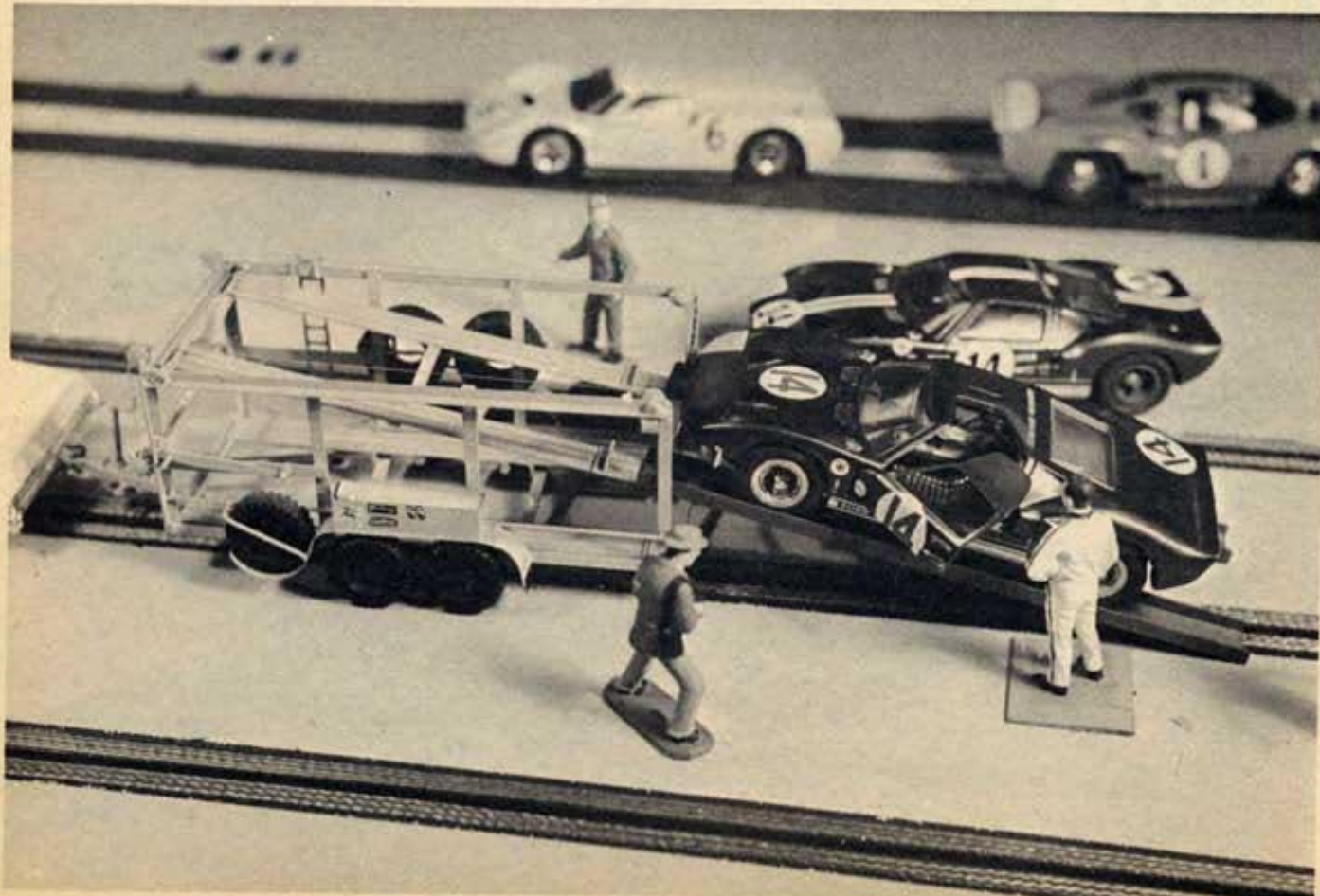
Best Engineering

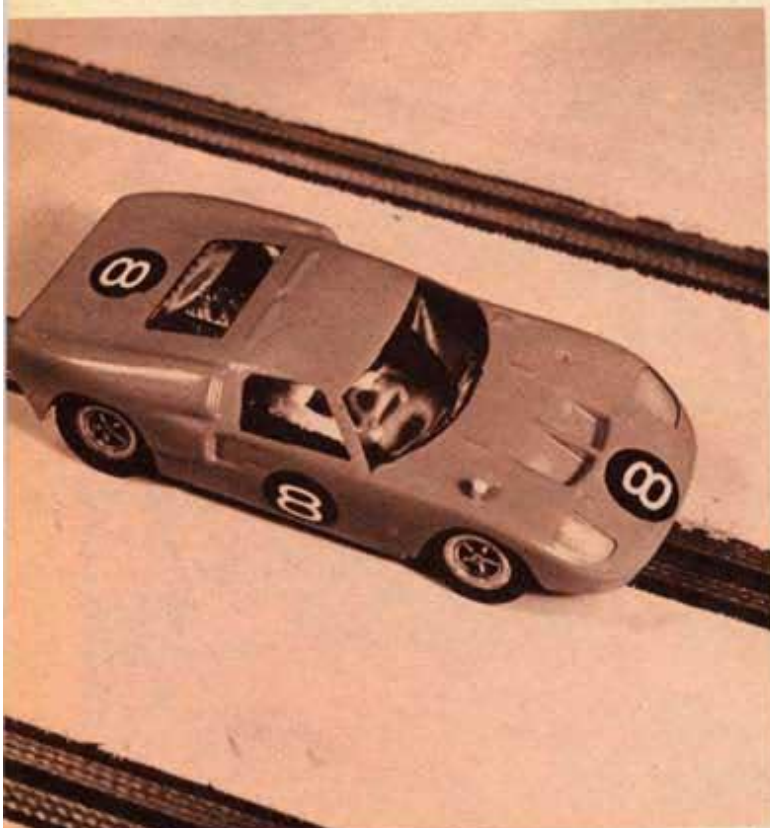
Glen A. Seegers	Lotus 19	Hemi rw	USA
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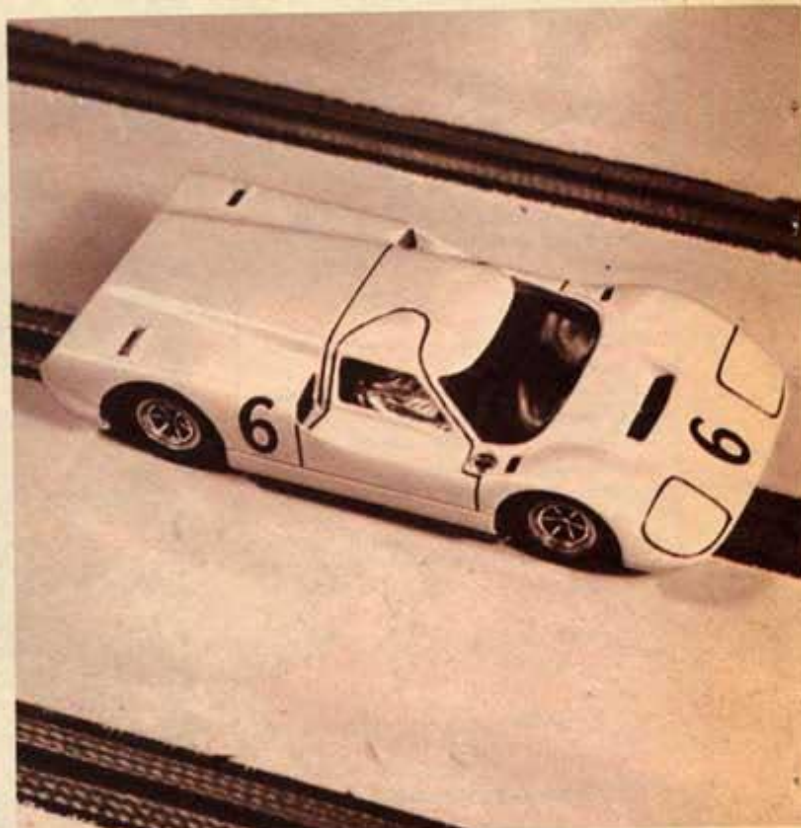
A side saddle sidewinder from the house of Moody. Chicago can be proud of this one.

Loading them up to go home can also be a production.



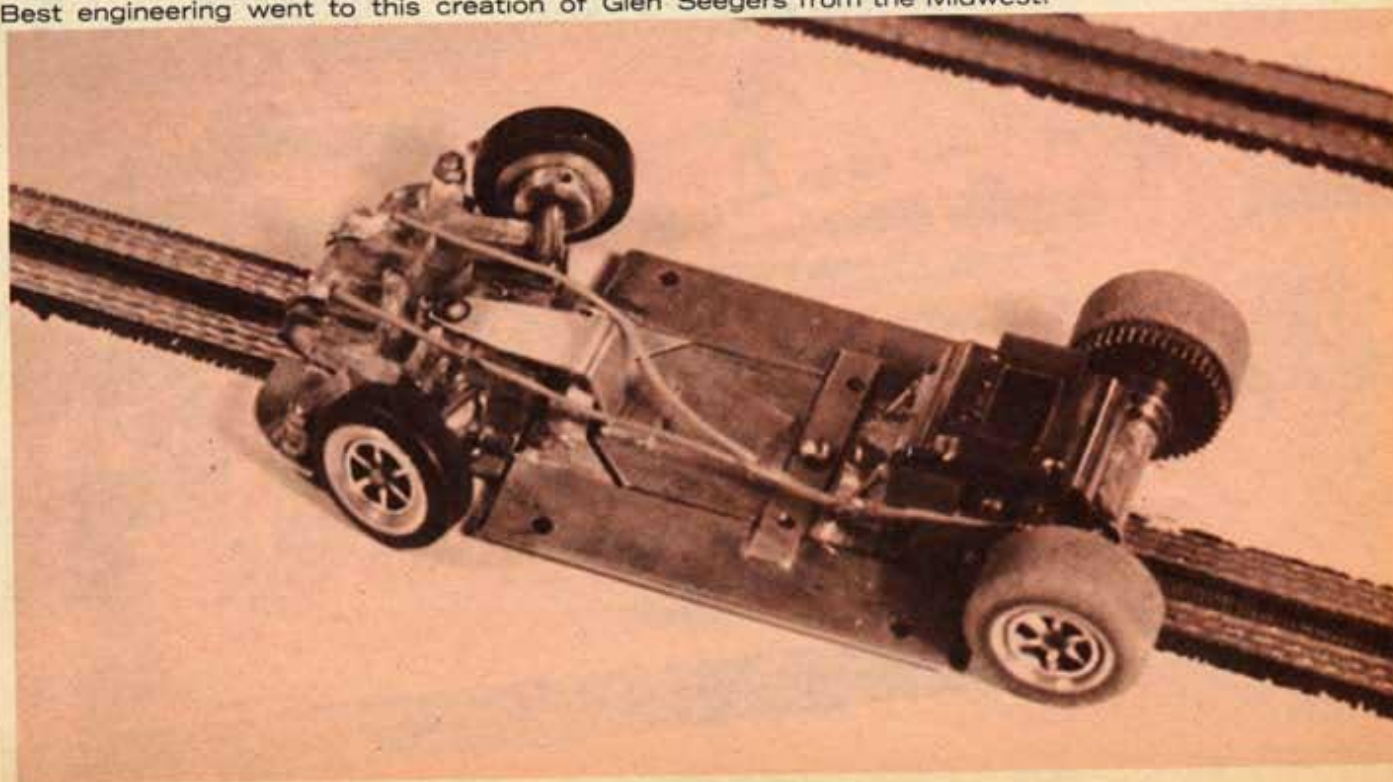


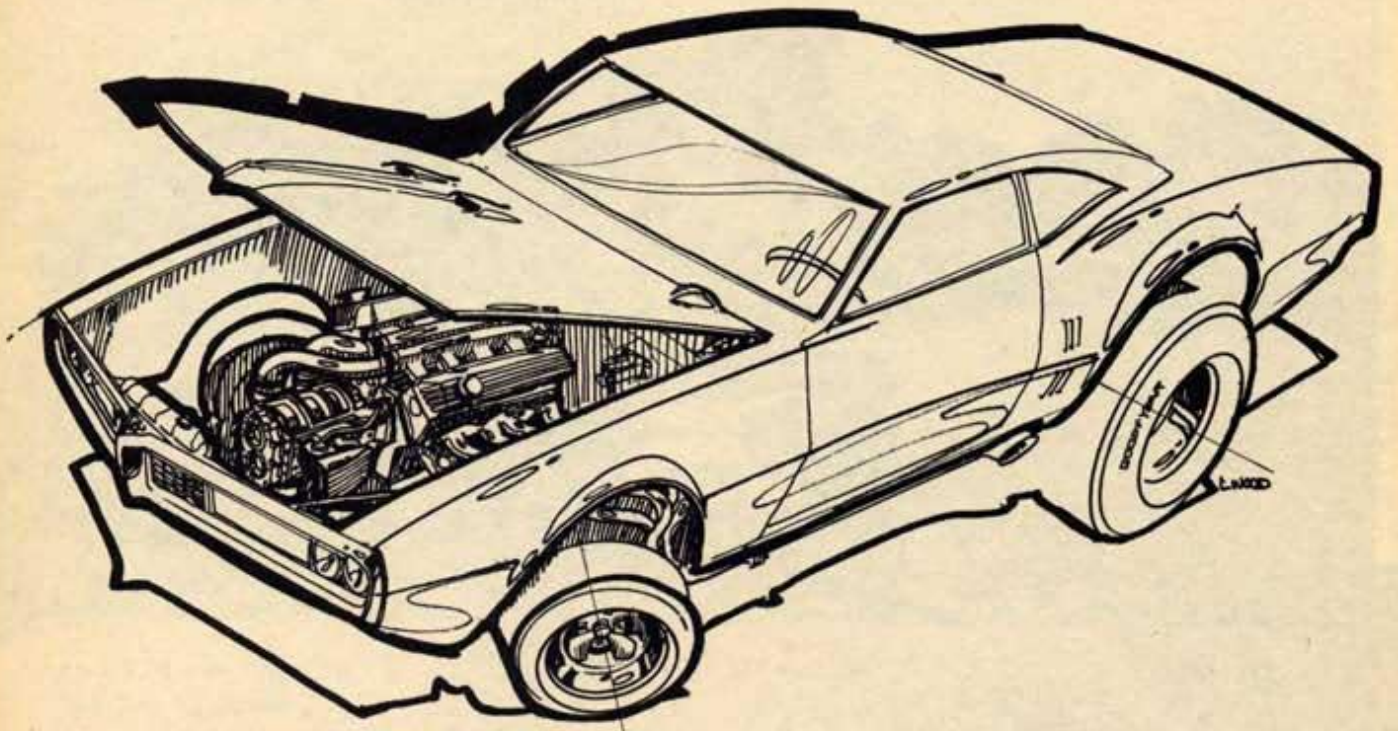
Best placed foreign entry of Noel Pietersen of South Africa.



The foreign concours winner, Andy Catterall's Gleaming Ford J car all the way from South Africa.

Best engineering went to this creation of Glen Seegers from the Midwest.





"I think the furnace is acting up again,
Look at my car!"



"Your car has just been protested!"

SCRATCHBUILT LOTUS/BRM

A 1/32 scale GP winner



By Robert Schleicher

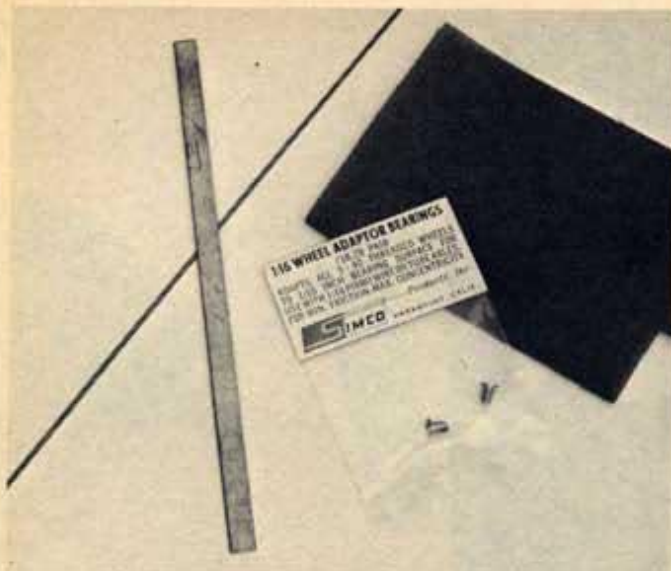
At present, the only 1/32 scale Grand Prix car kits available are the Monogram Lotus 33 and Ferrari 158. Granted, these are about as nice a kit, in both detail and performance, as you could want, but there are many who would rather be able to exclaim that "I did it myself" by building their own chassis from bits of brass and solder (known as "scratchbuilding," on the assumption that you could only "scratch up" a minimum of commercial products).

I tried to design a brass frame that would be as light as the Monogram kit chassis, yet still have as much strength and, if possible, a bit more convincing suspension detail, particularly in the front. You can follow the ideas in the photos to either build your own Lotus/BRM (or stock Lotus 33 or Ferrari 158), or merely to modify the body in one of the Monogram Lotus 33 kits.

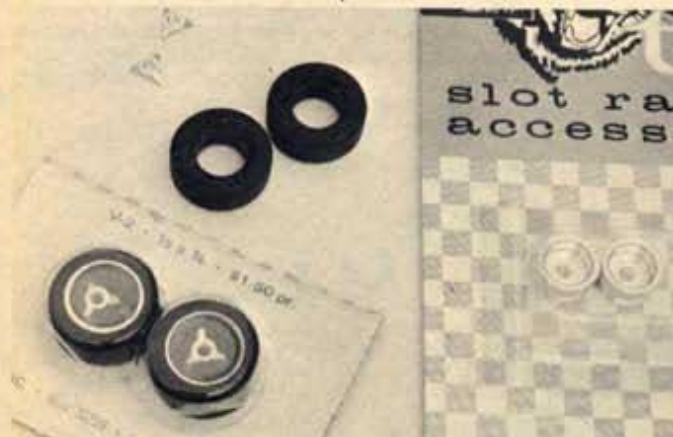
The full-size Lotus/BRM was raced by American Bob Bondurant, and other Europeans during the 1965 season. The cars were Lotus 33's, fitted with BRM engines and minor body modifications, painted blue with a red stripe and nose band. The *Model Road Racing Handbook* lists other details and sources of actual photos of the cars.

Lotus-BRM can be modified from either the Monogram motorized kit and chassis (left), or from their 75¢ body kit plus parts.





If you are making your own chassis, 1/16" x 1/4" brass strip, .030" (or 1/16" will do) brass rod, Simco pin wheel adaptors, and some fine mesh brass screen will be required.

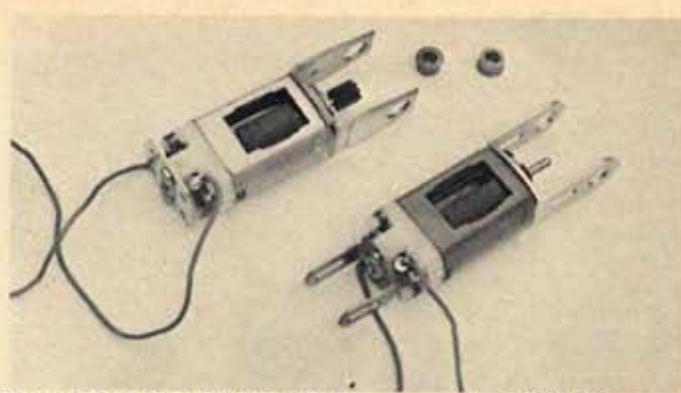


The more modern, wide-profile, tires and wheels can be duplicated with AJ's #V-2 for rear and widest Monogram for front.

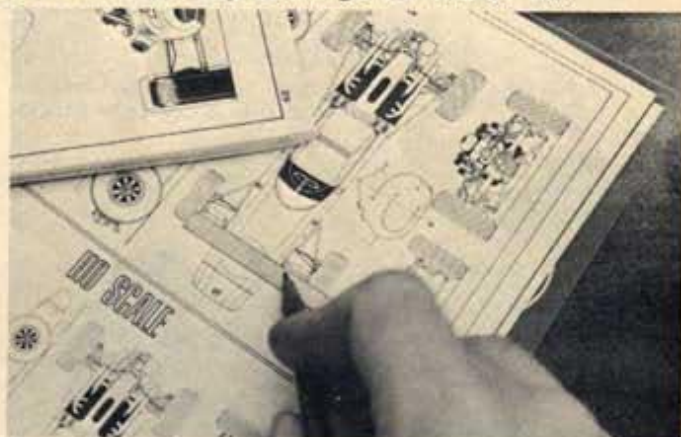


1/16" x 1/4" brass is cut and bent as shown to space front wheels 1-1/2" back-to-back.

Drill hole in front suspension side pieces to fit either #2-56 tap, or the straight pin you selected to attach front wheels.



Either the Revell SP-40 (top), or the X88 Monogram will do. Buy bearings for the SP-40.



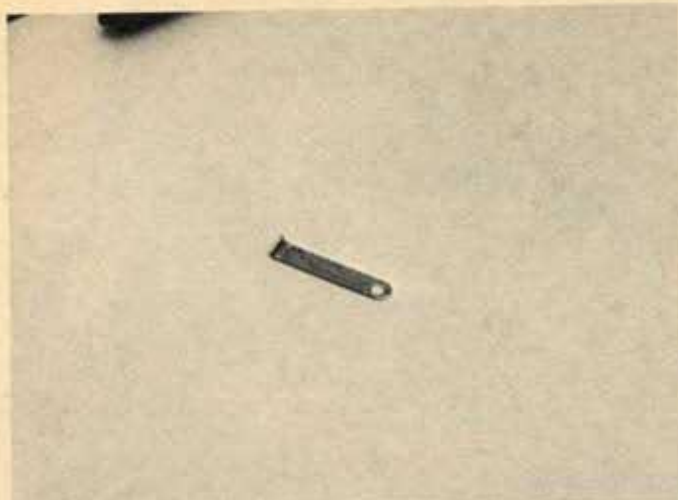
Plans from either the Aug. or Nov. 1966 Model Car & Track can be helpful in sizing the front suspension bracket.



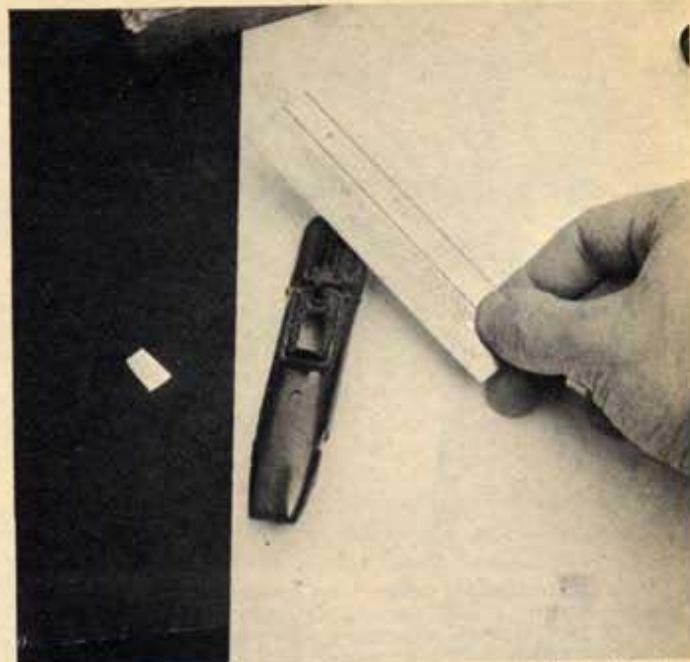
Dynamic knock-off nuts and the Simco pin-wheel adaptors are screwed into the Monogram wheels. Attach to front suspension bracket with either #2-56 screw or a straight pin with a 1/16" brass tubing bearing.

Lower front suspension bracket is formed from .030" brass rod (or 1/16" welding rod) to this exact shape.

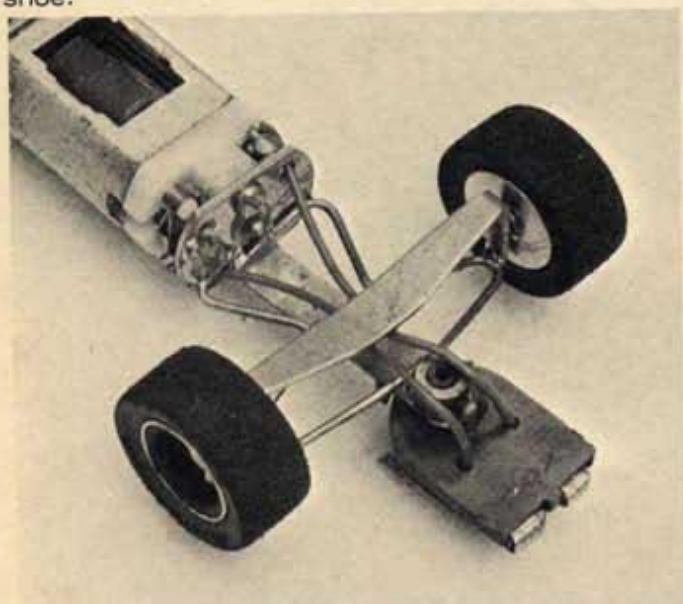




Pickup mount is cut from the 1/16" x 1/4" brass strip with 1/8" hole to fit Cox quick-change guide shoe.



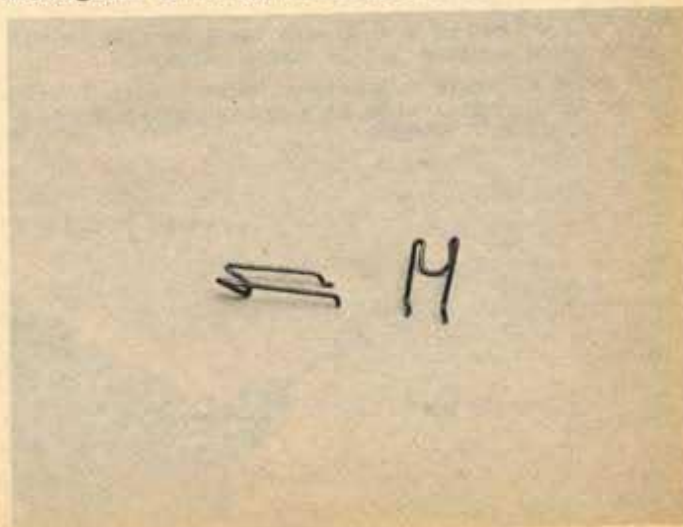
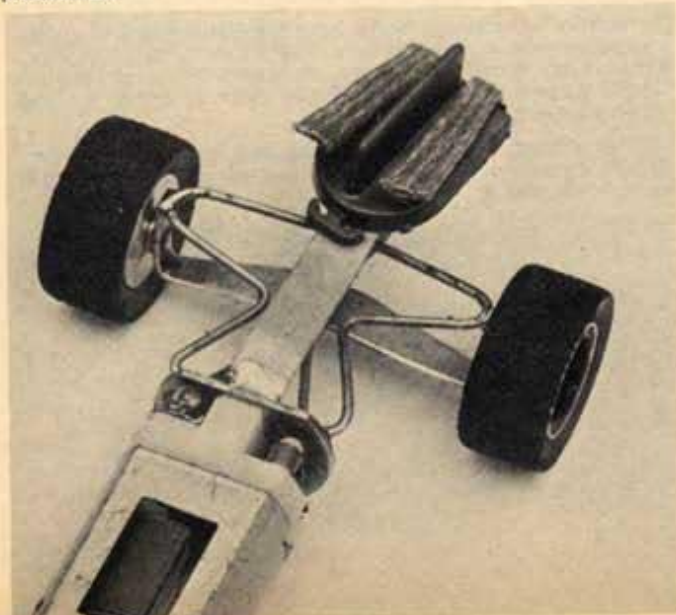
Body is next. To make mods to match Lotus, BRM, trim off exhausts and cut out their position, glue scrap of plastic to build up top of hole 1/16" and file smooth. Kit gearbox bracket and scrap plastic hide gears.

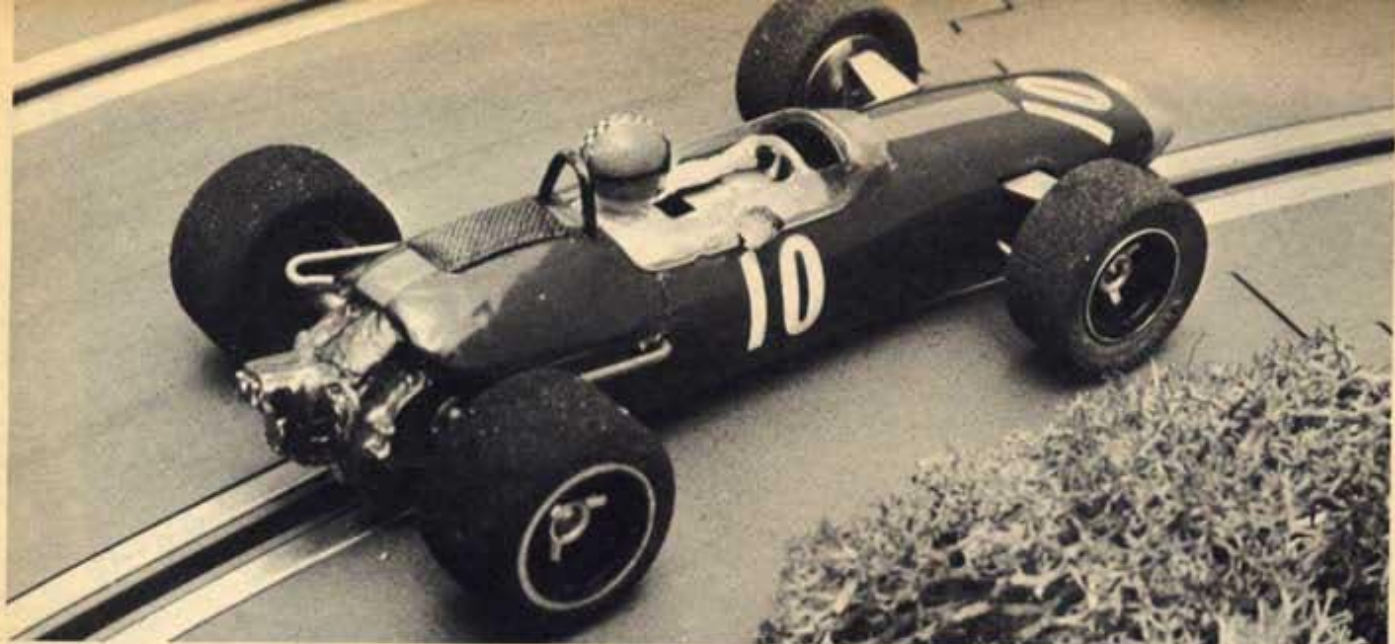


Top and bottom views of finished front suspension indicate position of the 3 pieces just bent and cut. Solder to the front motor bracket. Bend the sides of the rear axle bracket in as far as possible.



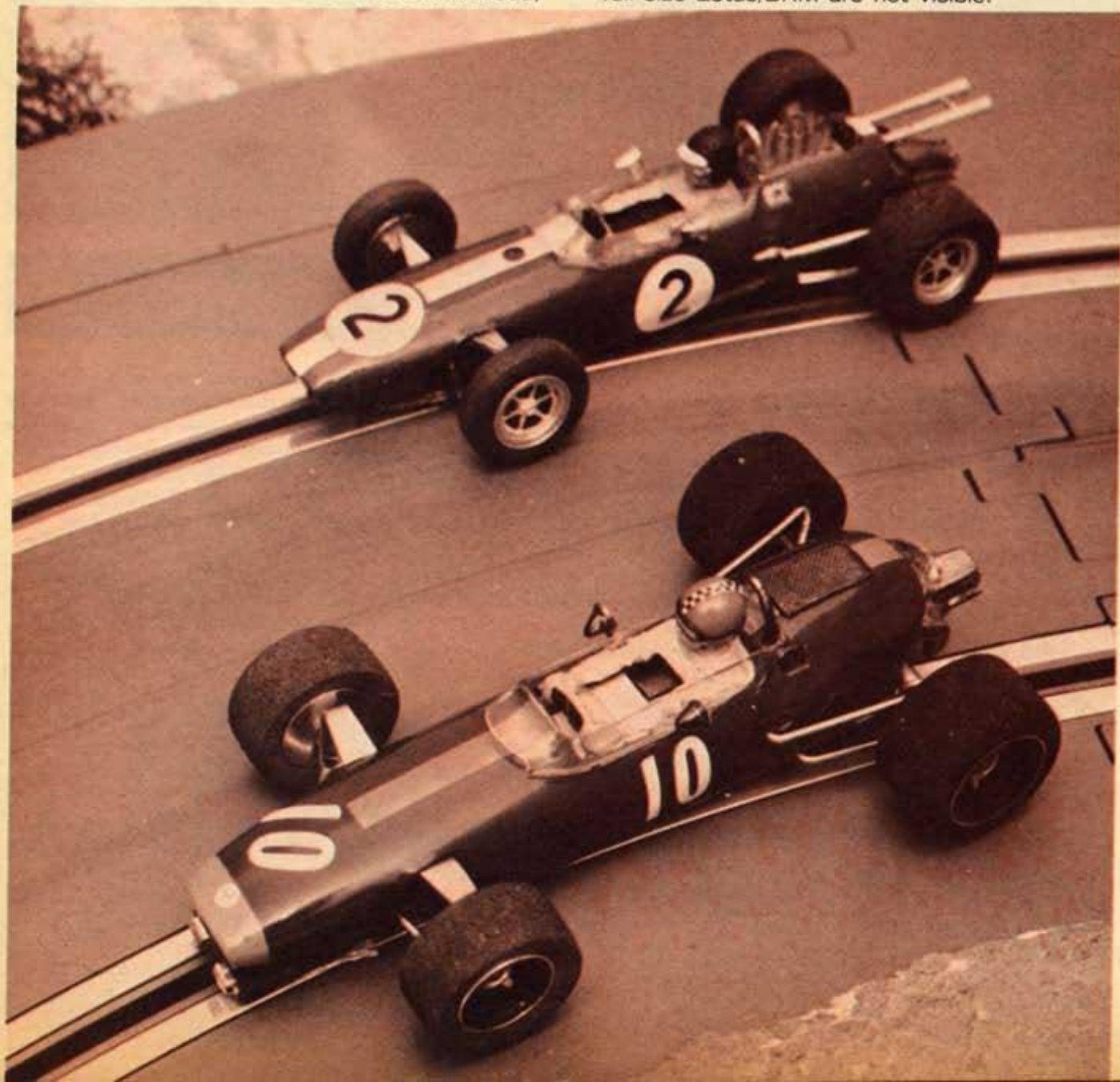
Views of the rear suspension arms to be bent from .030" rod. Note unequal length of top and bottom arms makes a right and a left necessary. Monogram arms can be substituted.





Fit the completed body to the chassis, to double check the gear clearance. Note the new shape of the back half of the body. Stripes are plane decals. Epoxy the arms into the new body holes, about 5/16" in front of the stock holes. If needed,

thin foam rubber on sides of motor can be used to hold body snug, away from suspension. Stock Monogram Lotus 33 is shown at top to indicate differences in body. Exhaust pipes on full size Lotus/BRM are not visible.





THE FIRST MC&S/U.S.R.A. L.A. CHAMPIONSHIP RACE

The 1968 series opener was a real record breaker!

By Gene Hustings

Photos by Al Hall

The first L.A. Championship series race for 1968, co-sponsored by U.S.R.A. (United Slot Racers Association) and Model Car & Science magazine was one to be remembered. The enthusiasm generated by the formation of U.S.R.A. and the cooperation from MC&S has really spread across the country. Chapters of U.S.R.A. have already been formed in many other states. (At the end of this article I'll explain how you can start your own chapter of U.S.R.A. in your area.) Our first race for sports cars was held at Circle "T" Raceway, 11024 Vanowens Blvd. No. Hollywood, California. Ken Tucker, the owner of the raceway, built the track, which resembles an American Red 150 track. Two power packs are used to power the hot rewinds the racers are now using.

The practice and preparation for this race started about three

weeks before this race. At that weekly race, Jack Garcia, the captain of Team Dynamic, showed the racers how it's done by winning it. The next week, Jack's teammate, Jerry Cowan, stole the show with his win, and at the last weekly race before the U.S.R.A. race, Garcia was leading with 5 laps to go when the endbell melted on his motor and John "The Jet" Cukras passed him and won it, with Jerry Cowan second. This made these three the early favorites. And of course the Checkpoint Team is always rated as THE Team to beat. But we also had two other famous teams come down from San Francisco. Part of the Mura Team came down 3 days before the race to prepare. The rest of the 7 member team and Ron Mura also came down along with the Lenz Team. Joe Kelly and Arnold Atkins gave some demonstrations with their Mura

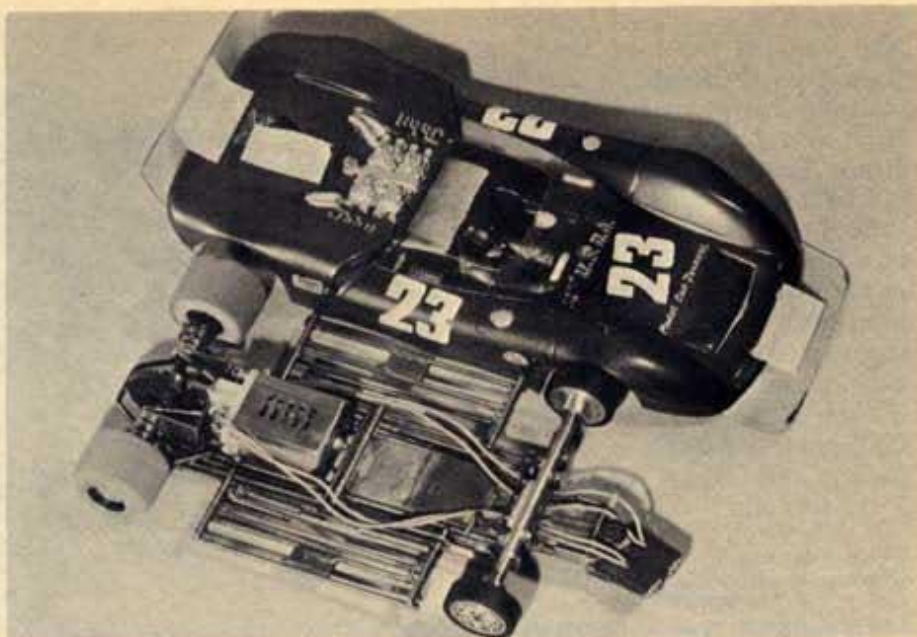
thingie-type cars which are popular in the Frisco area. Everyone agreed they didn't look much like a car but they *were* the fastest *THING* on the track.

Quite a few of the racers were using Mura's can-in-a-can type magnet shims, but the Arco 33's were the most popular magnets. I saw every conceivable type of armature and wind being tried. Stock Mabuchi-type laminations and Hemi laminations were about evenly split. Double 29 winds seemed to be the favorite, followed by #26's. Kirkwood comms were the overwhelming favorite with a few old diehards still successfully using the stock Mabuchi's. And of course every armature was dynamically balanced, most of them by Thorp. Champion's new shunted brushes were being used by some of the racers. Associated and Riggen pretty well had the wheel and tire situation to them-

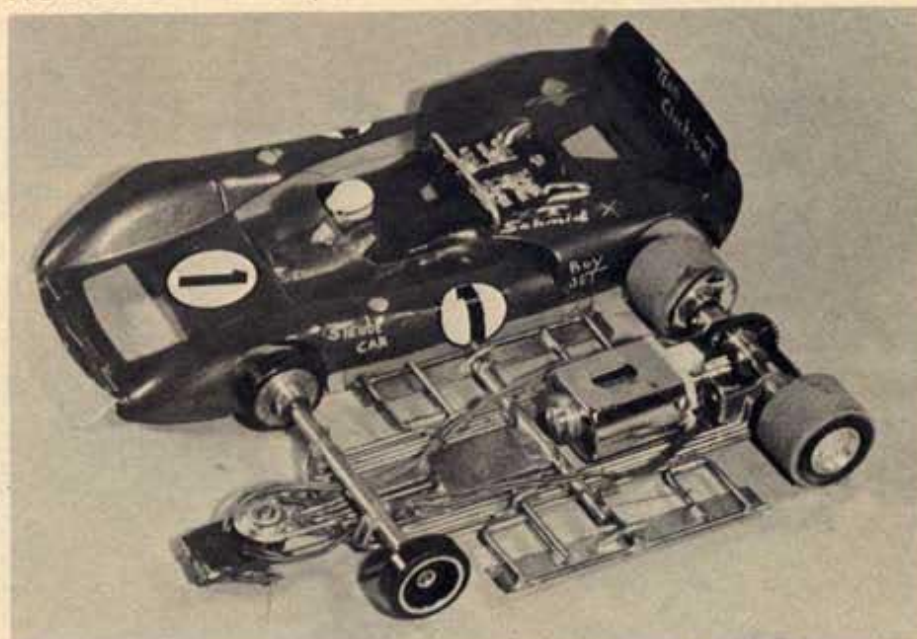
selves, with their set-screw wheels and blue sponges. Champion, Dynamic and Circle "T" were the most popular tire additives. About 95% of the bodies were by Dynamic with the Lola T70 and McLaren M6A the favorites. Half of these were painted and lettered by Kovacs.

The night before the race the track was packed, and it stayed packed until early morning. Everyone was trying out last minute changes and it seemed as if most of them were going fast enough to get the job done. I thought it was packed the night before, but raceday there was barely room to move around. Studio Catering really helped us by loaning us a few dozen chairs and 3 work tables for the racers. Lynn Fletcher and Mike Morrissey handled the qualifying with Dick Fisher teching the cars. Jack Garcia was among the early qualifiers and he turned a beautiful 5.12, then backed it up with *another identical 5.12!* This lasted for quite awhile until Mike Steube broke it with a 5.10. Jerry Cowan and Terry Schmid turned identical 5.12's in their efforts to dethrone Mike, but it took one of Mike's teammates, Lee Hines, to get the job done. Lee is getting stronger with every race and this was his best showing with quick time of the race at 5.09, winning him a Champion 517 motor. John Gallegos was the most consistant qualifier, turning 5.17, 5.18, 5.17 and 5.19. John was running a chassis built by Jack Garcia, as was Jerry Cowan and Bruce Erickson. John Anderson, of Team Champion, and naturally running a Champion 517, turned a qualifying 5.17. (I wonder if this was planned?) A former Champion member, now flying the *Model Car Journal* banner, John Cukras, obviously lacked for power, turned a 5.20. Arnold Atkins, from the Mura Team, made the best showing from the Frisco area with a 5.16, followed by Joe Kelly with 5.19. Joe won the Frisco *Car Model* Championship. The Checkpoint team dominated qualifying with all 5 of their members in the top ten.

After qualifying, the top 24 cars were judged for Concours by



John Cukras drove his Lola T-70 to first place in the 2nd consolation, first place in the semi-main and then to first place in the main. His Pete Zimmerman-powered car stole the show.



Second place in the main event honors went to Terry Schmid. Terry had the fastest car on the track with power by Steube. The floating body mounts were double hinged allowing the body to lift in two stages.

Mike Morrissey, Dick Fisher and Bob Kovacs. Lynn Fletcher, the popular president of U.S.R.A., set a fine example for the members by winning Concours with his Dynamic McLaren MK6A. Kovacs did most of the body work on the orange McLaren, keeping it realistic right down to the green tinted windshield. Jerry Cowan took 2nd place with Bob Green third.

Due to the large number of entries, two consolation races have been added to the semi and main events to give more racers a chance

to make the main. The first two place finishers from the 1st consolation move up to the 2nd consi. Matt Azzara must have wanted that move-up spot pretty bad.

Matt Azzara and Mike Levy moved up into the second consolation. The race started and 5 cars came off in the first turn. This is not a track call situation and John Cukras ended up being the last one put back on, over a half lap behind the leaders. He slowly worked his way back up thru traffic until on the last lane change

he caught up with Bruce Erickson, who had led the race from the start, and for the last 30 laps they were never more than 3 feet apart. John won the race by 1 inch over Bruce! How close can you get?

Cukras and Erickson then advanced to the semi. Cukras felt he needed more power and pulled a motor switch before the start of the semi, which proved to be a wise move. John Gallegos, Jerry Cowan and Cukras fought it out for the lead, with it looking like Gallegos might win it until a costly deslot gave Cukras the win by a scant few feet.

Mike Steube took 3rd place in the main with his "Steube Motor Co., Ltd" Lola T-70 special.

Mike's car is typical of most of the cars using brass rod for the chassis, drill blank axles, Associated wheels and tires, front and rear and Weldun gears.



1st Consolation

Semi-Main

PLACE	NAME	TEAM	E.T.	LAPS	PLACE	NAME	TEAM	E.T.	LAPS
1	Matt Azzara	Speed & Sport	5.28	80	1	John Cukras	Model Car Journal	5.20	120
2	Mike Levy	Matteson	5.36	78	2	John Gallegos	Dynamic	5.17	119
3	Bob Green	---	5.34	78	3	Jerry Cowan	Dynamic	5.12	118
4	Dave Howard	Checkpoint	5.33	75	4	Arnold Atkins	Mura	5.16	118
5	Bill Ussery	---	5.38	74	5	Bruce Erickson	Dynamic	5.20	117
6	Mike Jacobson	---	5.36	72	6	Doug Henline	Checkpoint	5.17	116
7	Dale Eicke	---	5.37	71	7	Ron Bietzel	Checkpoint	5.15	114
8	Dave Grant	Riggen	5.27	69	8	John Anderson	Champion	5.17	104

2nd Consolation

L.A. CHAMPIONSHIP POINT STANDINGS

PLACE	NAME	TEAM	E.T.	LAPS	PLACE	NAME	POINTS
1	John Cukras	Model Car Journal	5.20	100	1	John Cukras	10
2	Bruce Erickson	Dynamic	5.20	100	2	Terry Schmid	8
3	Lynn Fletcher	Dynamic	5.21	96	3	Mike Steube	6
4	Mike Levy	Matteson	5.36	93	4	Jack Garcia	5
5	Matt Azzara	Speed & Sport	5.28	93	5	Jerry Cowan	4
6	Joe Kelly	Mura	5.19	93	6	John Gallegos	3
7	Jim Wells	Lenz	5.24	90	7	Lee Hines	2
8	Jim Aguirre	Mura	5.27	82	8	Arnold Atkins	1

NAME	TEAM	QUALIFYING E.T.'s	BODY TYPE	MOTOR	TURNS AND # WIRE	MAGNETS	COMMUT
1 JOHN CUKRAS	M.C.J.	5.20	LOLA T70	ZIMMERMAN	35-D29	ARCO 33	COBRA
2 TERRY SCHMID	CHECKPOINT	5.12	LOLA T70	STEUBE CAN	43-26	ARCO 33	CHAMPK
3 MIKE STEUBE	CHECKPOINT	5.10	LOLA T70	STEUBE CAN	— D29	ARCO 33	KIRKWO
4 JACK GARCIA	DYNAMIC	5.12	McLAREN MK-3	DYNAMIC	38-D29	MURA	MURA
5 JERRY COWAN	DYNAMIC	5.12	McLAREN MK-3	DYNAMIC	45-27	ARCO 33	MURA
6 JOHN GALLEGOS	DYNAMIC	5.17	LOTUS 40	DYNAMIC	40-D29	ARCO 33	STOCK
7 LEE HINES	CHECKPOINT	5.09	LOLA T70	LEE-JET	46-D30S	ARCO 33	THORP
8 ARNOLD ATKINS	MURA	5.16	McLAREN M6A	MURA	31-26	MURA	MURA

The first four place finishers then advanced to the main, but before it started, Jeff Martinelli, the U.S.R.A. Treasurer, gave the prize money breakdown. First place was worth \$101.00, second place \$50.00, third \$33.00 and so on down thru 8th place! Plus a ton of merchandise. Ron Mura must have cleaned out his stockroom, he brought so many motors, armatures, magnets, shims, etc. for prizes. Champion sent a box full of parts, motors, magnets, shims, bearings and their new rear end bracket kits. Associated donated enough tires to keep the racers rolling for a long time. As if there wasn't enough pressure, the announcement of the awards elevated it to a fever pitch. The racers were all anxiously waiting to get started as Dick Fisher put the cars thru their final pre-main inspections. During the early part of the race the lead changed hands a few times

due to the "no track call" ruling, and then it settled down to Terry Schmid, the 1966, 1967 L.A. Champion, holding slightly over a lap lead ahead of Cukras. Terry would pull John about 3 feet down the straightaway but John out-handled Terry in the corners and doughnut so they ended up even at the start of the straightaway. This went on for over 30 laps. Another extremely fast car in the straightaway was Jack Garcia's, who was using the power to hold off Mike Steube, who was trying to take over 3rd place! And right behind these two were Jerry Cowan and John Gallegos, neither of whom were giving an inch. The lanes were changed for the final heat, with Schmid moving to the outside, or slower lane, and Cukras moving to the faster inside lane. At the start of the heat, Cukras was one full lap down, but he was making up about 3 feet per lap on

Schmid. It was just a question of whether or not there were enough laps remaining for Cukras to overtake Schmid. There were, for with just a few laps to go, Cukras passed Schmid for the lead and held it for the win by a very few feet. This very same situation was also occurring between Garcia and Steube, with Steube edging out Jack in the final few laps for third place.

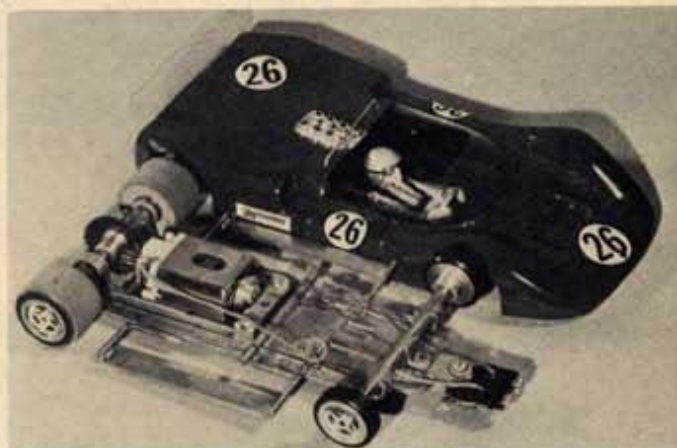
Lynn Fletcher presented the awards to the lucky winners starting with the trophies presented by Ken and Jean Tucker. Besides thanking the co-sponsor of the race, Model Car and Science Magazine, U.S.R.A. greatly appreciates the donations from the following concerns: Associated, Mura, MC&S Magazine, Champion, Weldun, Russkit, Fred Scott - Dist., Dynamic, Kovacs, Mini-Auto, Speed & Sport, Rikken and Thorp.



U.S.R.A. President, Lynn Fletcher, set a fine example for the Association to follow, by winning Concours with his Dynamic McLaren MK6A. The orange body was painted by Kovacs and had an authentic green-tinted windshield. Kovacs painted and lettered half the cars in the race.

CONCOURS POINTS STANDINGS

1	Lynn Fletcher	3
2	Jerry Cowan	2
3	Bob Green	1

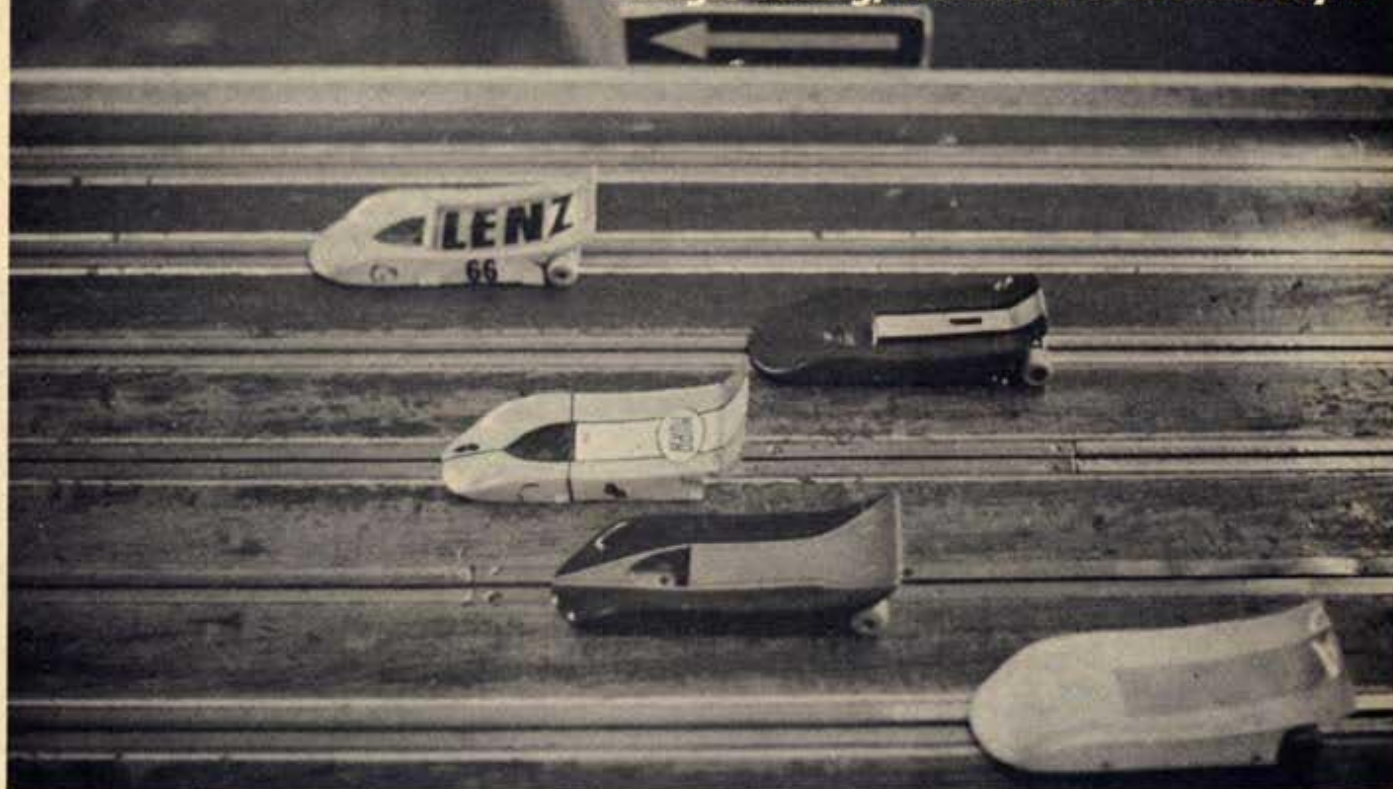


Top man on the Dynamic team with a 4th place in the main was Jack Garcia, with a Dynamic McLaren MK III featuring a "Dynascratch" chassis. Jack used Mura's can-in-a-can shim and Mura magnets.

DRIVER	FRONT WHEELS	FRONT TIRES	REAR WHEELS	REAR TIRES	TIRE GOOP	GEAR RATIO	CONTROLLER PICKUP	
WELDON	WELDON	MINI-WHEELS	RIGGEN	RIGGEN	CHAMPION	WELDON 4.5:1	COX-MRC	COX
JOHN	WELDON	K & B	WELDON	ASSOC.	ASSOC.	WELDON 4.8:1	COX	COX
JOE	ASSOC.	ASSOC.	ASSOC.	ASSOC.	OWN	WELDON 4.5:1	COX	COBRA
	DYNAMIC	MINI-WHEELS	RIGGEN	RIGGEN	MOO-MOOTOO	COX 5:1	MRC	DYNAMIC
	WELDON	MINI-WHEELS	WELDON	RIGGEN	MOO 1 + 2	DYNAMIC 4.5:1	MRC	DYNAMIC
	DYNAMIC	DYNAMIC	DYNAMIC	DYNAMIC	MOO TOO	DYNAMIC 4.3:1	COX	DYNAMIC
	ASSOC.	ASSOC.	ASSOC.	ASSOC.	OWN	WELDON 3.6:1	COX-MRC	DYNAMIC
	DYNAMIC	DYNAMIC	ASSOC.	ASSOC.	MURA	VERSITEC 4.4:1	MURA	COX

BAY AREA RACING

Thingie racing, Northern California style



Holy thingie, Batman! Don't let George Barris see this. A whole trackload of San Leandro's finest.

The sport of slot racing takes many different forms throughout the world, but some of the most distinctly unusual cars are found in San Francisco. When the MC&S racing squad of Glen Toma and Chris Chan packed up their boxes and boarded the big jet at LA International they had almost no idea of what to bring along. The last anyone had any news of the goings-on in the Bay Area slot scene was Chris' spotty report after he was wiped out in the Western Model Car Championships way back in 1965. But even then the strong tendency in car building towards the thingie branch was noticed. Almost all the new tracks opening up had long, fast straights and wide open curves. It was evident that the locals craved SPEED. The tires were a shocking blue or white and at least 5/8" wide and cars were butchered beyond recognition. The Chan Chaparral stood like the Indy Offy in the 1966 500, a prime example of the dying breed.

It had won the LA Regional Championship on scale wheels and tires and a full concourse detailing treatment. The Pittman 65A-6 powered slot dinosaur did its best and took home the cup for concourse but was completely overwhelmed by a hoard of white tired whatsits. Chris packed up his white and brown exact scale Dodo bird and dejectedly headed back to LA to find a way to make a scale car that goes as fast as a thingie.

So when the MC&S Team unloaded the latest in LA pro machinery fresh from impressive efforts at CMRA races they felt pretty confident that the thingie crowds lightweights would see the evil in their ways. But it happened again. Those rotten whatsits ran all over them again. And to add a little more misery to scale buffs in the smog basin, Ron Mura's thingie squad came to LA for the USRA inaugural and ran a thingie around an LA track almost 4/10 of a second faster than the top pro

car of Lee Hines.

What are they all running in the Bay Area? Why and how have these cars grown to be so popular? Well, MC&S's team got a good look at the hot pro thingies during their stay, and this is what they found.

Chassis: Typical thingie frames have two pieces of 1/16" piano for rails. A drop arm is usually not necessary and so the two wires attach directly to the pickup block, U-Go accessory. A wide variety of pickups are used, with the Cox and Dynamic most popular. Brackets are ball bearing equipped Russkits or U-Gos braced by the piano wire rails. Drop piano wire front axles are all they will use, soldered to make a 3-3/4" wheelbase. For body mounts, the 1/16" brass tubing is merely soldered on to fit whatever width body they choose, but the tubes don't solder all the way across both rails. Instead one tube each is made for the four pins and soldered only to the side on which

the pin is to be inserted. This prevents the mounts from altering the flex of the frame. The result is, of course, an extremely lightweight structure that is as strong as your ability to solder. Some racers have added small pieces of .016" brass plate to give them the precise desired handling. This extra weight is soldered into the rear bracket area flush with the base of the bracket, or along side the piano wire, LA style.

Tires and Wheels: San Francisco still stays a step ahead of the crowd with 11/16" tires in white or light blue in the back with 1/2" O-rings for fronts. Rear tire widths are up to 3/4". Wheel tread still remains at three inches. With the ultra-small tires the rolling frames set just a hair above the track, but the front tires don't touch at all. The front tires ride just above the track surface down the straights and touch only as outriggers in the corners.

Bodies: With the high speeds and light weight of San Francisco chassis, a special body had to be designed just to keep them on the track. These anti-lift lightweight "wedges" look like a cross between a door stop and an inverted soapdish but they really nail the cars to the track. They look like Bonneville LSR cars, and actually represent a current trend in real car development. With the front wheels not touching for forward stability on the long chutes the aerodynamics of the thingie shell keep the car firmly slotted.

Motors: Surprisingly the fastest motors are the out-of-the-box Muras and Lenzs. It isn't quite as surprising though when you realize that these two rewinding giants base themselves in the bay area and run extensive testing throughout San Francisco and most of Northern California. #25 wire winds are running hot along with comparable ohm double winds. I'm sure that the San Franciscans will be the first to build chassis and wind motors with the same gauge wire. Mura and Lenz full-case shims with the old Versitec magnets take care of the torque department, although not a lot is needed with such light cars. Gearing is about 8 to 29 again going

back to the Versitec line.

To get a first-hand look at thingie racing, Chris stayed in San Leandro with the Mura and Lenz teams and ran the Thursday night race at "A" Street Speedway. This is a monster of a track with no less than five super rocket straights. LA drivers are used to one. Running Bob Lenz's personal silver-core, wire-wound thingie, Chan managed to qualify midway up the field and keep his rent-a-car intact for its owner to run in the main. Ron Mura had taken the top time

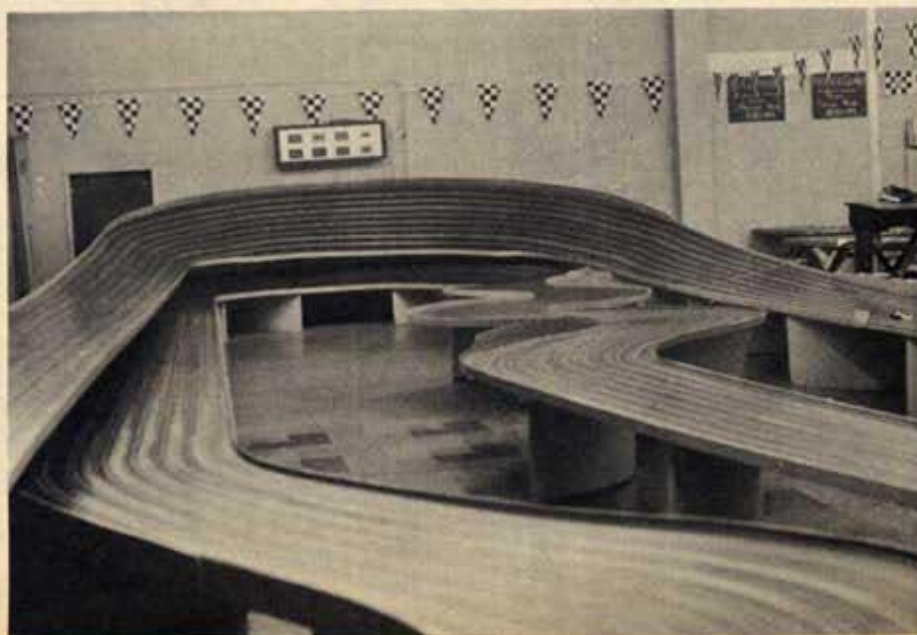
with a box-stock Mura (you were expecting a Thorp?) in the chassis Chan smuggled back into LA. Incidentally Ron's 6.92 on that immense track set a new record.

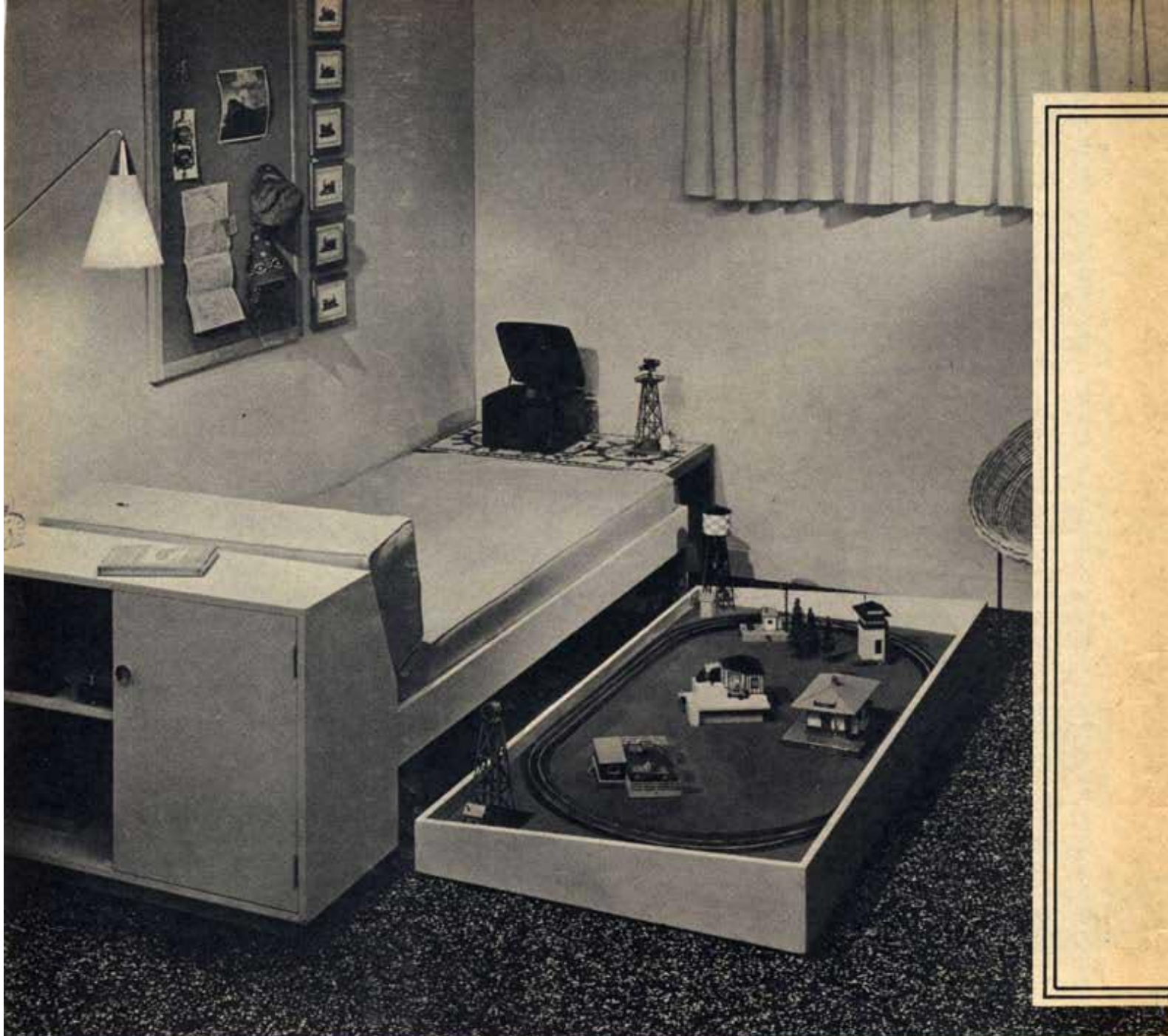
While the thingies were indecently fast to some, and just plain indecent to others they answer the general desire of the Northern California buffs to go faster. They have a design that is built to go like blazes through the straights and wide banks and they tiptoe through the esses. They may not look like cars, but they're easy to build.



Bay Area motor builder for four years, Bob Lenz examines his thingie before letting "Noose" Chan qualify it.

A view of the enormous "A" Street track with its super fast straights and grim esses.





ROLL AWAY

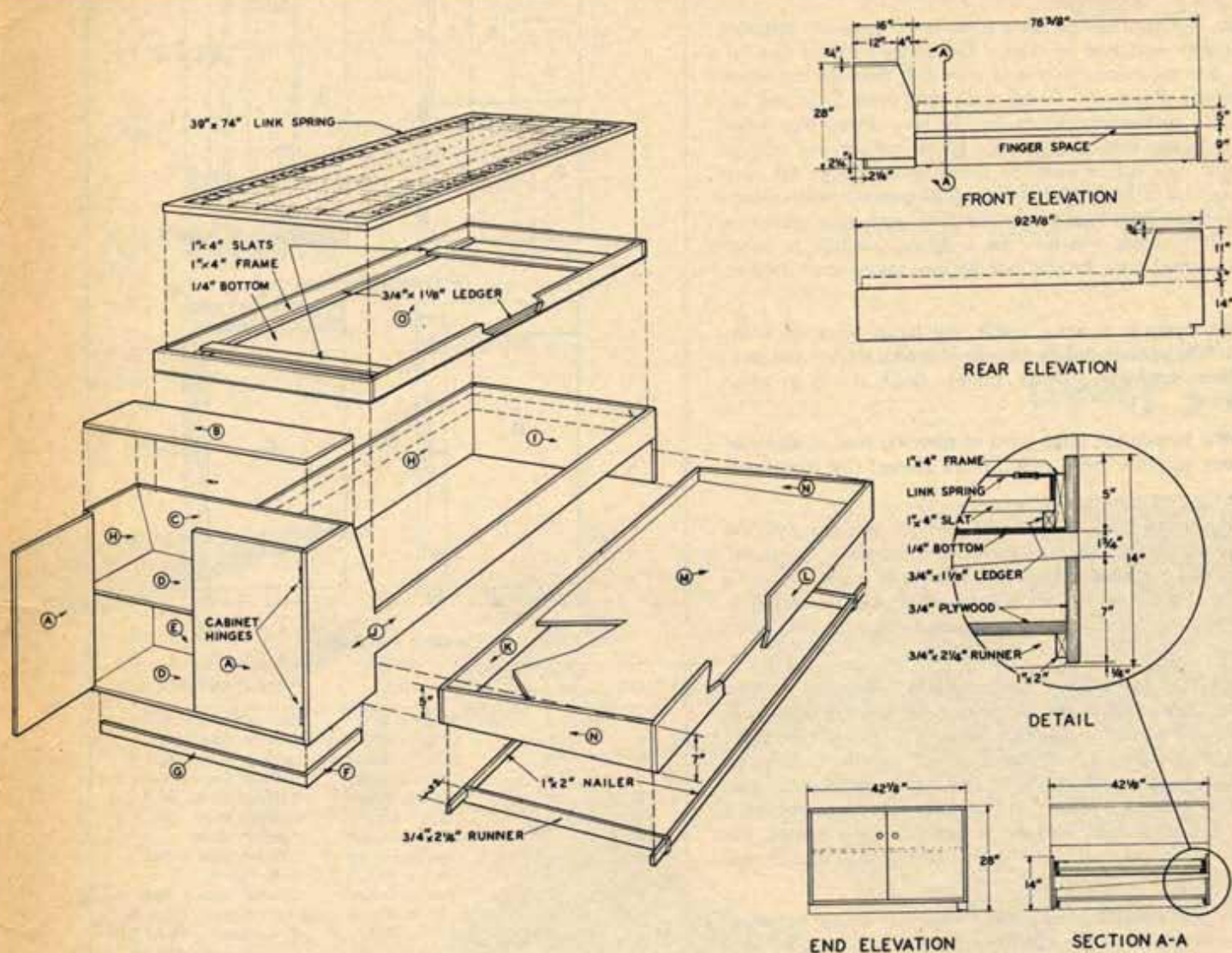
IF YOU ARE TROUBLED BY THE PROBLEM OF PROVIDING SLOT RACING SPACE IN AN AVERAGE-SIZED HOME, THIS DESIGN CAN BE A PRACTICAL SOLUTION.

If you've got the yen to race but no space, this under-bed track has been designed to accommodate an average, single-sized link spring and mattress. Slot cars and accessories, when not in use, can be placed on shelves in the storage cabinet that also serve as a headboard.

EASY STEP-BY-STEP INSTRUCTIONS

With no rabbeted or dadoed joints to make, this unit can be easily constructed without using power tools. Follow procedure given in this plan for simplest and speediest construction.

1. All parts are first carefully laid out on plywood as shown on cutting diagrams and parts schedule. Allowance must be made for saw kerfs between adjacent parts.
2. Next, cut all component plywood parts to size. After cutting ends and sides to length, assemble 1 x 4-inch frame. Be sure that the link spring which must fit within this frame has 1/16-



GRAND PRIX

inch clearance at all inside faces. Glue and nail $\frac{3}{4} \times 1\frac{1}{8}$ -inch ledger strips and 1 x 4-inch slats as shown. Now apply $\frac{1}{4}$ -inch plywood to bottom edges of frame assembly.

3. Using 6d nails and glue, fasten storage cabinet sides and rails to bed frame assembly. Be sure that the vertical back of storage cabinet has been notched for toe space and the foot board notched to receive bed rail before fastening them to bed frame between sides as shown. Install cabinet bottom after fastening $2\frac{1}{4}$ -inch base to form toe space on adjacent sides. Nail and glue sloped cabinet back and shelf into place between sides. Apply top and then hang doors, using semi-concealed cabinet hinges.

4. Construction of train board is next. First, rip $\frac{3}{4} \times 2\frac{1}{4}$ -inch runners from 1 x 3-inch fir stock. Fasten these to underside of train board with 6d finish nails and glue in position as shown. Attach sides to complete assembly.

5. Ease all edges with a block plane and then sand with 1-0 paper. Using spackle or wood paste, fill all nail holes and exposed plywood edges. Finish sanding should be done with 3-0 paper.

6. Finish cabinet completely with stain or paint as recommended. Door edges should be thoroughly sealed and both faces finished alike.

7. Install door pulls and catches after last coat of finish has thoroughly dried.

BUILDING TIPS

Fir plywood is manufactured in large-sized panels which simplify every building step for you. Laying out the parts for cutting is the only step required before starting actual construction. Be sure to allow for saw kerfs between adjacent pieces.

SAWING. For hand-sawing use a 10 to 15 pt. cross-cut. Support panel firmly with face up. Use a fine-toothed coping saw for curves. For inside cuts start hole with drill then use coping or keyhole saw. For power sawing a plywood blade gives best results but a combination blade may be used. Panel face down for hand power sawing. Panel face up for table power sawing. With first cuts, reduce panel to pieces small enough for easy handling. Use of scrap lumber underneath panel prevents splintering on back side. Plan to cut matching parts with same saw setting. If available you may use a jigsaw, bandsaw or sabre saw for curved cuts. In any case be sure blade enters face of panel.

DRILLING. Support plywood firmly. For larger holes use brace and bit. When point appears through plywood, reverse and complete hole from back. When drilling, finish slowly to avoid splintering.

PLANING. Remember, edge grain of plywood runs in alternate directions so plane from ends toward center. Use shallow-set blade.

SANDING. Most sanding should be confined to edges with 1-0 or finer sandpaper, before sealer or flat undercoat is applied. Fir plywood is sanded smooth in manufacture — one of the big timesavers in its use — so only minimum surface sanding is necessary. Use 3-0 sandpaper in direction of grain only, after sealing.

NAILING. Nail size is generally determined by thickness of plywood used. With glue, the following sizes will produce strong joints. For 3/4-inch, and 5/8-inch plywood, 6d casing or finish nails. For 1/2-inch, 4d or 6d finish nails. For 3/8-inch, 3d or 4d. For 1/4-inch, use 1-inch brads or (for backs where there is no objection to heads showing) 1-inch blue lath nails. Substitute casing for finish nails wherever a heavier nail is needed. For exterior work, use galvanized or hot-dipped, zinc coated nails to avoid rust.

OTHER FASTENINGS. Screws, bolts, and other special fastenings may be used. Always pre-drill for screws. Minimum screw sizes for each thickness of plywood are recommended as follows: 3/4-inch plywood, 1 1/2-inch No. 8; 5/8-inch plywood, 1 1/4-inch No. 8; 1/2-inch plywood, 1 1/4-inch No. 6; 3/8-inch plywood, 1-inch No. 6; 1/4-inch plywood, 3/4-inch No. 4.

GLUING. Glue may be used on both edges and faces. Apply glue to clean surfaces. Press firmly together until "bead" appears. Maintain pressure with clamps, nails or screws to allow glue to set. For exterior exposure use resorcinol type waterproof glues. Gluing is recommended for strongest, permanent fastening.

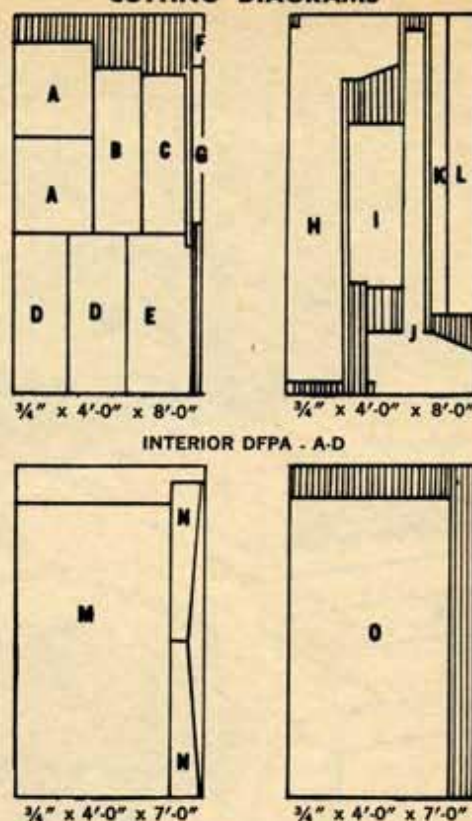
HOW TO BUY FIR PLYWOOD

Fir plywood comes in two types: 1. EXTERIOR-TYPE for outdoor use. 2. INTERIOR-TYPE for indoor use. Within each type are grades for every job (i.e., grades with two good sides where both sides of the panel will be seen, grades with only one good side for applications where only one side will be in view in the finished job).

INTERIOR FINISHING TIPS

For best results use only top-quality materials. Follow manufacturer's instructions. Extra care in surface preparation and application will add to lasting appearance. Clean all surfaces perfectly and fill nail holes with wood paste. Sand lightly be-

CUTTING DIAGRAMS



INTERIOR DFPA - A-D

PARTS SCHEDULE

CODE	NO REQ'D	SIZE	PART IDENTIFICATION
A	2	20 1/4" x 24 1/4"	Cabinet Door
B	1	12 1/4" x 42 1/4"	Cabinet Top
C	1	11 1/4" x 40 3/4"	Cabinet Headboard
D	2	14 1/2" x 40 3/4"	Cabinet Shelf & Bottom
E	1	17" x 40 3/4"	Cabinet Back
F	1	2 1/4" x 13"	Cabinet Base
G	1	2 1/4" x 39 3/4"	Cabinet Base
H	1	See Drawings	Cabinet Side & Rail
I	1	14" x 41 3/4"	Foot Board
J	1	See Drawings	Cabinet Side & Rail
K	1	5" x 75 1/2"	Train Board - Back Rail
L	1	7" x 75 1/2"	Train Board - Front Rail
M	1	39 3/4" x 74"	Train Board - Bottom
N	2	See Drawings	Train Board - Side Rail
O	1	40 3/4" x 75 3/4"	Bottom - Bed Fame
	14 Lin. Ft.	3/4" x 1 1/4"	Ledger
	14 Lin. Ft.	1" x 2"	Nailer
	8 Lin. Ft.	1" x 3"	Runner
	28 Lin. Ft.	1" x 4"	Frame and Slats
	1 Ea.	39" x 74"	Link Spring & Mattress
	2 Pr.	Semi-Concealed Hinges
	2 Ea.	Friction Catches
	2 Ea.	Door Pulls

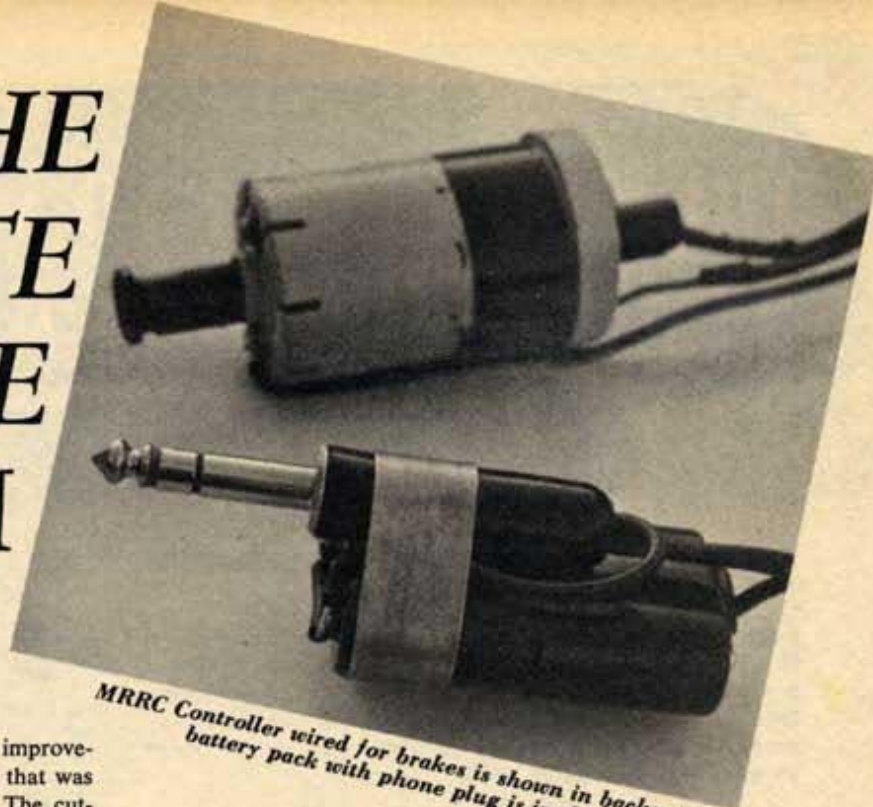
MISCELLANEOUS—6d finish nails and glue finishing materials

tween paint coats. Use non-toxic finishes for items to be used by very young children.

PAINT FINISHES. First, brush on flat undercoat. Then apply second undercoat, slightly tinted with finish color. Last apply finish coat as it comes from can. For a gloss finish, use second undercoat made by mixing equal parts flat undercoat and gloss enamel. When using water-thinned paint, seal plywood with clear resin sealer, shellac or flat white oil point.

NATURAL FINISHES. For easy, inexpensive "blonde" finishes, first apply coat of interior white undercoat thinned so grain pattern shows through. (Tint if you desire color.) Apply clear lacquer, shellac or varnish. Attractive one-coat stain waxes are available in colors. If you prefer a dark stain, first apply a coat of clear resin sealer to subdue grain contrast.

THE ULTIMATE BRAKE SYSTEM



MRRC Controller wired for brakes is shown in background, battery pack with phone plug is in the foreground.

When dynamic braking was finally developed, the improvement in lap times over the old "cut-off and glide" style that was necessary when running without brakes, was fantastic. The cut-off point into any given corner could be moved three to four times closer to the corner than without brakes. Needless to say, the reduction in lap times could be measured in seconds, and not fractions-of-seconds.

Here's the next step in braking, and as far as I can see, the last step, as I cannot see how it can be improved on. In the neat little package you see in the photo, is the ultimate braking device. It is extremely easy to install in your present wiring layout, and it gives a tremendous reduction in lap times over dynamic braking. A pair of penlight batteries, hooked in parallel in the wire running from the brake connection on your controller, (wire "C" in any standard hook-up) to the jackbox, provides the power to REVERSE your motor when you let up on the controller, which of course, puts the brakes on in a conventional dynamic braking layout.

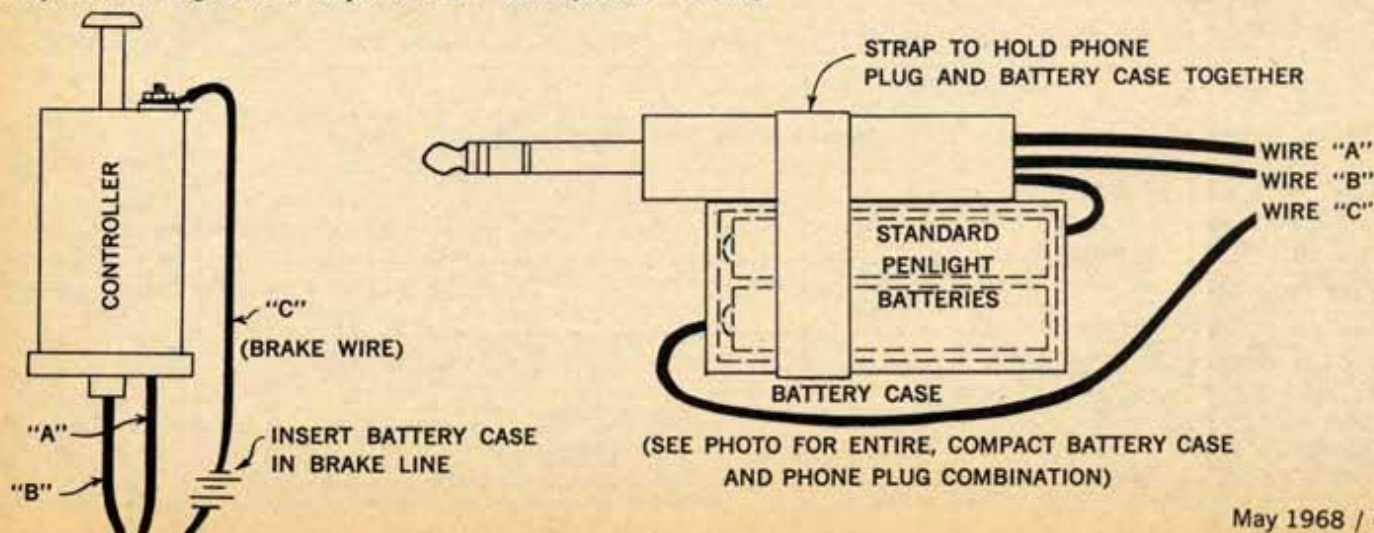
In a system that uses straight dynamic braking, there is still a certain amount of "gliding" involved, even though the motor is acting as a brake against the forward momentum of the car, but with battery braking, the motor is actually reversed and the rear wheels are turning BACKWARD while the car is still going forward toward the corner. Needless to say, this provides BRAKING! On extremely fast road courses, where there are very tight corners placed at the end of very long straights (usually by a fiendish designer) the use of battery braking can actually result in a gain of a couple of FEET over dynamic

braking without battery. The difference at the end of ten laps can be light-heartedly calculated to give you about a one lap lead over dynamic-braked cars. Interested?

To install this device, procure a penlight battery box such as is used in the model airplane industry for radio control work, or else buy one from a place such as Lafayette, Newark or Allied Radio. Dubro makes one, and they can be had in most well-equipped electronics stores. Buy one that accepts two standard penlight batteries. Disconnect the standard phone plug at the end of wire "C" and connect the end, instead, to one end of the battery box. Now take a short piece of wire and connect the other end of the battery box to the regular "C" connection on the standard $\frac{1}{4}$ " phone plug. This one wire, (the brake wire) is the only wire you will have to disturb. Now place the batteries in the case. If the rear wheels of the car *do not* reverse, but instead run faster forward, reverse the battery connections of the penlight battery case.

To make a neat looking package, strap the phone plug to the back of the battery case, as shown in the photo.

You will find that you will have to learn to drive the course all over again, now that you have new shut-off points. It will even require a little nerve to drive to the limit with battery braking.



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Southern Sampling



by FLOYD MANLY

The gods are dead! They've gone down in defeat. The *new* god is Steve Parrish, at least in Orlando, Florida. The Champion of Chamblee people featured their 1968 Arco Race at the Aloma Model Raceways, and Steve, a local boy walked off with all the bacon *by 10 laps* over the field. Steve qualified over 33 entries to prove that his speed was more than a tired turtle's. Me? I qualified 7th, and that's another story. Bob Parks, another local qualified 5th, to prove we *do* have some runners down here in "Gatorland" that show the "jet set" we know what speed is.

Steve ran a nice smooth, fast race and stayed out of trouble. Parks, Cozine, Carpenter, and yours truly all placed nice large dents in the wall at the Deadman's turn and this had a definite detrimental effect on the handling characteristics of our vehicles. In fact we badly hurt our cars! I demolished mine during the practice laps before the start of the semi. The race started and I sat out 40 laps bending all the brass back to shape, to get back in long enough to hit the Deadman's *again* (I forget bad things easily) and tore the can off the motor. This noosed me but good!

Parrish walked off with the whole bag under the new Arco prize-money rules. *This* year, there are two first prizes, one for the factory teams and one for the unsponsored entries. This way the locals can get a bite of the lettuce. Now, catch the last hitch that has the teams growling in their goop. They can collect only the *team* money, but if a local places first, the local gets *both* first prizes, such as Steve pocketed. Nice, eh? The fast local can't lose his bushel of apples and could win the whole tree.

The way to make money is to make the right guess at the right time, early enough to beat everybody else to the gate. Jack Garcia, Research and Development man of Dynamic guessed wrong about Hi Johnson's "Sloppy Sam" (floating) body mounts theory, but Hi, being older, wiser, *and* of more rank in the Dynamic dynasty, overruled his objections! And so Garcia designed one and Dynamic has the first commercial competition chassis with the type of body mounts that are standard on *all* the money winners. Jack told me a secret about setting up the mounts but I'm not going to reveal it. *You* write to him—and ask! Jack Lane, of Champion, is good at making the right money making guesses, and he's hit another with their new "Stage 2" brass rod frame. It has a redesigned motor mount, parallel rods, and a *solid* brass drop arm that's as beautiful as a smile on your girl friend's face.

Remember, back when 29 and 28 wired motors were real jets, and dewinding was a way to get more speed? Then came the 27 wire, then Champion's 26 wound 517's that are impossible to outdo. Now I see a #25 wire Mura on the shelves. The \$13.95 is a stiff price for everybody up to Daddy Warbucks, but the 60 day guarantee interests me just enough that I might buy one to play with.

If it's any faster than the shunted brush 517's, I've had it. I'm over my head with speed, and way behind with reflexes. That's what it takes to win races; the re-

flexes of a scared cat! I can *buy* a fast motor and *build* a chassis that handles like a well-greased roller coaster, but trying to drive it is another matter.

Fade, dissolve, cut to two days later. The new #25 wire Mura is fast! It had the punch, speed, and brakes of the best on the track yesterday in a 2 hour enduro. But guess what happened to place me last again? Yep... Deadman's-ville again! Do I sound sour? Just bitter at my memory, which seems to be as lasting as a soap bubble in a hurricane. I could begin to hate this stupid game of slot racing—if I didn't love it so much.

If there were a prize for boobs, I saw the guy that should be the Grand National Champ! All it took was 3 easy steps. 1. He bought a Champion 517 motor. 2. He paid \$9.95 plus sales tax. 3. He took it apart and started to cut the winds off! "Say, 'Noose' whatadevil ya doing?" "Oh, I'm gonna have it rewound." Ho boy! When they passed out *brains*, he must have thought they said *trains*, and he said "No Thanks, I've got the money, I'd rather fly."

Have you seen Lancer's latest Can-Am series? The Matich and Chapparral 2G are so handsome I really don't want to botch them up with a pair of scissors and orange paint. Lancer is trying the danglest to get us to run "Scale." Almost wish that I were more handy with the triple 0 brush. Anything smaller than a haybarn white wash brush gets lost in my meat hooks.

Two last items and I'll close for now. First. Riggins gears! If you haven't tried them, you're running second best! One bad thing—they only go up to 33 teeth and the motors nowadays need 4.5 and 5.0 to ratios. That means 7 to 35!

Secondly, don't write to Garcia. I'll tell you his secret. Set up your "Sloppy Sam" mounts so the "up" stops press on the drop arm. Let the body tilt about 1/8 inch before the stop touches the arm, then let it push only about 1/16 inch. This forces the arm into the slot in the turns. Team Dynamic is using it.

THE WORD FROM THE WEE WORLD



BY
DENNIS
ELLIOTT

The mail I have been getting in response to my first column is truly gratifying. I want to thank everyone who took the time to write to me, and I especially appreciate the kind words and support I received. But I also love to argue and thoroughly enjoyed reading the letters of those who disagreed with me. Sadly, time does not permit me to answer each letter personally. I tried for the first few days but soon had to admit it was hopeless. Again, my thanks, and don't stop.

As expected, I received a few letters disagreeing with my idea of abolishing HOCCI's Stock Division. These guys say something like "The only modification I have made is to put on Aurora slicks" and "When I race, I don't want to have to compete against the rewind-La Ganke-AJ's-Aurora super-modifieds."

First off, HOCCI regulations state that any mod automatically puts a car into the Modified Division. When you put on those Aurora slicks or make any other "little" change, you are competing with the super-cars. To race Stock you must remain *completely* stock.

Second, as things stand now, the Stock Division should be called the Aurora Division because, except on a drag strip, the Aurora cars are un-

beatable, skinny tires and all. Now, just what would happen to the Stock Division if Cox or Mura or somebody suddenly dealt themselves into the HO game with a "stock" car that would run rings around even the fastest Aurora-based super-car? It would go down the tube that's what, and Aurora would be sitting out in the cold with Atlas and Tyco. All HO racing (at least all the winning) would be done with the new Cox, or whatever, with no differences between the divisions. The mail has been running about 2 to 1 in favor of abolition, so I say again, the only way to race is by body style. The defense (prosecution?) rests.

* * *

By far the most popular topic of discussion in the letters I have received is rewinding. To all those who wrote offering to pay me to wind them an armature: sorry, but I can't possibly rewind arms for everybody, or *anybody* for that matter, at *any* price. I suspect that a guy with the right facilities could make a fortune selling custom HO rewinds. Is anybody listening?

I hope no one followed my example of a couple months ago and wound 375 of #38. It was a good, fast wind but it was only a "blind" starting point. Now, after a couple months experimentation, I think the fastest winds will ultimately be from 200-250 of #37 or 38, depending on the particular power supply and track. Using the La Ganke #36 or maybe even venturing down into 1/32 wire sizes (#34, for example) we might be winding in the high 100's soon. Time will tell.

For all those who wrote asking how to go about rewinding, I will try to get a complete HO-to article in the mag as soon as I get my camera working, fair 'nuff?

* * *

Man is my face red. Narrow-minded road-racer that I am, I called Aurora's Toronado and T-Bird useless a couple of month's ago and stepped on the HO drag racers of the world. And man did they stomp back. Would you fellows accept my apology for hacking your beloved funny cars and stop the hate letters? Now that you mention it, they do make rather nice funnies don't they?

Judging by the mail, HO drag racers are almost as numerous as road-racers, and twice as vehement. I'll try not to neglect you turn-haters but you'll have to watch me closely.

Several draggers have asked if I would print the fastest times recorded at their local strips. I'll be glad to print any and all times I receive, provided we all keep a few things in mind: (1) Any times I print will not be official, HOCCI or otherwise. The official HOCCI drag records were set last November at the Invitational and will not be contested (as far as I know) until the '68 Invitational. (2) Please record times only for the official HO standing quarter mile (15.1 feet). (3) Please give me the specifications of both track (especially the volt-rating of the power supply; don't exceed 20 volts) and car. (4) Please be accurate and honest.

Okay, here are the first times I have received. Carl Dreher of Gary, Indiana reports times of 3.8 and 1.5 for Stock (that's *pure* stock) and Unlimited, respectively. These times are for the standing half-mile, but, by simple extrapolation, we come up with times of about 1.9 and 0.75 for the quarter-mile. Not bad. Carl's track is home-routed, formica-surfaced, and powered by a Strombecker Vari-Power transformer.

* * *

I have received so many questions that I am going to have to start doing the Don Emmons bit. Here goes:

Q. Where can I buy Tyco's Little Wheelie?

A. From America's Hobby Center, 146 West 22nd Street, Dept. MC&S, N. Y., N. Y. 10011.

Q. What is the best HO controller?

A. Controllers are largely a matter of personal preference. I personally like the Tower-Stat R60, mainly because of its "feel." HO pros have their own pet controllers, but most of them prefer either the Tower-Stat or the Atlas 45 ohm 1/32 unit. This controller comes with brakes and has a very good ohm-rating for today's hot rewinds; it's definitely the best \$3 controller, if not the best overall.

* * *

BOOK REVIEW — *HO Car Model Racing*, OLR Publishing Company, Inc., 615 Ridge Road, North Arlington, New Jersey; \$1.00.

The monstrous, golden, comic book-like blurb that adorns the cover of this book reads "The First Complete Guide to HO Scale Racing." After traveling from cover to cover (an 82-page journey rivaling *Unsafe at Any Speed* for sheer boredom) at

least a dozen times, I seriously question the completeness of this purported "guide" to HO racing.

Actually, the book is nothing more than reprints, reprints that were old when first printed and ancient the second time around. The best of the lot is, without question, the saga of Scottsboro Raceway. I must admit that Scottsboro is the best track-building article printed to date (accent on *to date*). Neatly constructed as it is, Scottsboro is just not my style of track (farms, sawmills, and dancing halls in the infield?). Why is it that so many HO-ers clutter up their tracks with scale cities, castles, churches, yellow-brick roads, cows, chickens, etc., etc., and then stick a couple of Atlas pits in a corner someplace?

One of my favorite pet peeves are those tried and true, hashed and rehashed "How To Oil Your Car" articles. The one on page five of this book is, without a doubt, the worst I have ever read. Such gems as "Be sure the pack is properly plugged in . . .", "HO cars get dirty . . .", and "Aurora cars have a small copper clip holding the gear plate to the chassis," really grabbed me. If it had been in Mad Magazine, I would have laughed.

The one redeeming feature of the whole book is the collection of track plans of 12 famous 1/1 race tracks. These were drawn by Aurora's engineers and are very nice, all being four-lanes and making extensive use of the new 1/8-radius six-inch curve. Perhaps in a 25¢ portfolio similar to the Atlas layout book, these plans would be worthwhile, but tucked away in *HO Car Model Racing* they are wasted. I recommend this book only to the rawest novice who has been in the game less than two weeks or to the guy who wants to get a peek at the Aurora track plans and has a buck he doesn't need.

To even begin to qualify as a "complete guide" to HO racing, a book must contain: a complete run-down on every HO product made by every HO manufacturer (not just Aurora); the addresses of the manufacturers and other important outfits connected with HO; a feature on HOCCI; and of course the basics—track building, car maintenance, etc.

But, as the great golden blurb says, *HO Car Model Racing* is (tada) the first all-HO book. HO de-

served better.

* * *

It's frightening how many HO-ers write to me asking how to go about joining HOCCI. Simply send your name, address, and \$2 to HOCCI-NAMRA, P. O. Box 578, Times Square Station, New York, N. Y. 10036. And answer one question: why aren't you chaps already members?

* * *

TABLE TOP RACEWAY CONTEST: The winner of this month's contest and subscription to MC&S is Dan Walsh of Allendale, New Jersey. Dan's track features full scenery, including pits, buildings, lights, greenery, and 25 feet of track. Congratulations, Dan.



RUMOR HAS IT THAT . . . AJ's is thinking seriously of—get this—putting *mag* wheels in future TK-110 silicone kits! Remember, this is only a rumor and there are quite a few problems involved, but since I heard it from Mr. Maurice E. Winn himself, don't be too surprised if . . .

* * *

AURORA DEPT.: Several readers have taken me to task for cutting Aurora down these past few months. They say that "that same old T-Jet" is the fastest in HO. Yes, I know that. The sad part is that it is five years old and still the fastest. And that's just not progress.

But if I think Aurora is bad, I think the others are infinitely worse. Although I often don't like Aurora's new products (especially body styles), at least they are doing something other than sitting on their hands. It's been over a year since Tyco's Cheetah and Little Wheelie, and I can't even remember when Atlas had a new car.

Sure Aurora has its Batmobiles, but Atlas has its station wagons, Lionel has its police cars, and Faller has its Opels.

I'll be the first to admit that Aurora is the best HO manufacturer, but that's not saying much.

* * *

NEW STUFF DEPT: I just learned the name of Aurora's long-awaited prototype, and almost wish I hadn't. It's the Ghia-De Tomaso Mangusta, and while it technically is a "prototype," it is in actuality a show car, a design experiment, a custom if you will. It has never turned a wheel in competition and never will. The Mangusta is a beautiful car, and will make a beautiful model—for parking on the desk or in the infield and looking at—but not for racing! And, after all, that is the name of the sport, not "model motoring," or "turnpike trundling," or "sit around and make money."

At the same time the Mangusta was announced, Aurora also announced that its next two cars will be dune buggies (!) in open and closed versions. Groan. Now, isn't that just what we've always needed? Let's see, not counting last month's McLaren (which was introduced in 1965) and the J-Car (which Ford never raced), Aurora's last race car was the Dino Ferrari, which was introduced in '66, and (mercy me) here it is 1968. Kinda makes you want to thank God for Lancer.

Richard Harrison (of Hobby House fame) was kind enough to send me some of his new goodies. Thanks, Richard. It's nice to be able to say something good about some HO stuff once in a while. All of Richard's stuff works and works well. I received a sample of his Mo-To-Clean (50¢), Silicone Tire Lube (25¢), Sponge Cleaner (25¢), Detergent Racing Oil (25¢), Independent Front Axle (40¢), and Wide Front End Kit (25¢) and can vouch for them all.

* * *

MANUFACTURERS TAKE NOTE: Wouldn't it be nice if some month I could quit asking for a driver figure and something F1?

How about a lap-counter that doesn't cost \$10, doesn't count two laps at a time or "hang," and isn't so big and hard to hide.

* * *

Next month we'll have quite a few little surprises. Till then, keep those letters coming in, not only to me but to everybody involved with HO. See you this summer.



By Tom Malone

THE TECH SHEET

This month we introduce a new section to this magazine devoted primarily to technical matters. The technical aspects of slot car racing is actually only one phase of this hobby-sport. Pure modeling as exemplified by concourse competition is entirely separate from all other phases of racing, yet even here the "technical" aspects enter into the picture.

There are "pro" racers, the now-and-then knockaround racers, the experimenters, the club racers, and the never to be forgotten home track enthusiasts. All are concerned with the technical aspects of this hobby regardless of scale or viewpoints regarding scale or thingie; for all racers are concerned with either more speed or greater efficiency.

Our discussions will be oblivious to such controversies as to which scale is best or which organization stands for what or represents whom. By the same token the question of thingie versus scale is put to one side and ignored, for this is a matter of personal preference except where the technical aspects of aerodynamics is applied to out of proportion spoilers and diplanes as used on thingies to counteract lift and provide high speed stability.

This is not to say that I do not have personal preferences, for I do! And in some matters I'm quite definite in my bias but I base my bias on tests; *facts* if you prefer, rather

than on pure opinion without bias.

We all have our opinions and preferences and this is a healthy mark of human intelligence if we make our judgments based on true facts — that is *correct* information. I'll go into this again a bit later.

Our discussions in future issues will consist of motor tests, chassis and motor design, track wiring, and the factors that affect horsepower, complete with formulas. We shall run *impartial* motor tests and show rpm, torque, and horsepower curves and figures, and discuss how various modifications change these figures. We will discuss subjects such as magnets, armature laminations and their various configurations, etc., as found on the market today.

The facts, as presented, constitute a sort of product comparison, but this is *not* intended to imply that this product is better than that, or that this is good and that is junk. A comparison is made from the standpoint of different design approaches and not condemnation of a particular brand or construction technique.

It must be borne in mind, that every design has an application if the proper track conditions exist. Advantages and disadvantages have a strange way of reversing themselves under different circumstances. A double 29 wound motor is a good example. It will scream on a commercial battery-powered track, while run only fair on a low-amp power pack, and *not at all* on a home track with a 1 or 1.5 amp power pack.

If I evaluate a particular product and find it good, I feel I have the right to say so in so many words and let it go at that. By the same token, if a design is evaluated in a *strict engineering sense* and it is deemed not the best, then I do not feel it is unfair to point this out as well.

For instance, from a strict engineering standpoint the present 16D can design has a number of shortcomings and is not *the very best* when used in conjunction with the present crop of high energy magnets. In the first place it is not fabricated from thick enough metal to prevent flux leakage. Even the Champion 517, with its thicker case and heavier horseshoe shim around the magnets, still gives a reading of 6 points on the meter so there is still leakage on this Champion motor.

Next, there are limitations as to the thickness of metal that can be "drawn-down" when stamping a configuration such as a motor case. Also, the tooling must be made slightly wedged shaped so the in-

ternal die can be withdrawn after stamping. Granted this wedge shape amounts to very little from open end to the closed bottom end. But because of this wedge the magnets are not exactly parallel from front to back. Consequently, the air gap (and flux density will vary between the armature and magnets.

Remember, I'm not condemning anyone's products. I'm simply stating facts as they relate to different design approaches.

Contrast the normal can design with the Versitec 101 design. The 101 uses .135" thick, cold roll steel top and bottom, joined at the sides. With separate caps at each end the magnets are parallel and the air gap is constant along the armature's length. Also, if the 101's magnet is placed in a normal can, the meter, as shown in last month's issue, goes clear off scale when held even close to the case, but only gives a reading of 1 unit when held next to the 101's case.

As shown last month, the Pittman can and Dynamic's GE motors both gave a low reading, and in both of these motors the magnets are parallel, yet each manufacturer achieves this by a different design. From the standpoint of simplicity the Pittman is good in that it retains a one-piece stamping.

I am not comparing size, cost, weight, or adaptability to racing but simply considering one motor design factor, that of the motor case thickness as it is related to deriving the most magnet potential from a given permanent magnet. In this case we are not even comparing magnets or their relative strengths.

The foregoing discussion is an example of where we were using instruments which would give a reading and we could base our conclusions directly on the results. We can now make the statement that design-wise and in construction these three motors: the Versitec 101, Pittman can, and Dynamic's GE motors have *more efficient cases* than do Mabuchi cans.

There are times when instruments will give true and accurate results but the results can easily lead the experimenter to the wrong conclusions and the best example of this is comparing magnets and their strengths.

A gauss is a unit of measure for coercive force or to the layman, magnetic flux strength. A Versitec magnet shows a 1000 reading, and with shim, 1100.

Now if we test the new Mabuchi

motor with the gaussmeter, we get a reading of 1200. If the Mura Semi Can shim is added we obtain a reading of 1250 or a little better. Just in passing I might note that the old blue and white Mabuchi magnets would register 600 to 625 and Hemi's show up with 700 to 750. Every set of magnets varies somewhat.

If we were to rely on the gaussmeter alone we would predict that the New Mabuchi magnets with the Mura shim, would give more torque and faster lap times than the Versitec-Lenz combination if we used the same frame, body, tires and armature and changed just one factor—the magnets and case. Just the *opposite is true!!* The Versitec-Lenz is faster, has faster lap times, pulls a lower gear (more torque), has high rpm at rear wheels, and draws less volts as well as less amps (see chart).

I don't have the demagnetization curve for the Mabuchi magnets, but in motor design the formula for magnets reveals that a magnet's strength is dependent not only upon what material is being used and whether it is fully radially oriented or simply random oriented (radially means all lines of force are directed toward the center) and the radius of curvature, but greater upon the magnet's area and volume. Versitec's have a longer length, larger volume, and larger area, which is an important factor. And the fact that they are fully oriented so the lines of force are parallel to the face of the armature stack at all times accounts in large measure for the difference in performance.

I have the demagnetization for the Versitec and also for Indiana General's Indox 3 (old Arco as used in 707 motors) and these two curves look very much alike. Even the peak energy products are the same (2.6×10^6 , a subject we'll go into in a later article) and the Indox 3 in a Mabuchi 16D case gives a 925 to 950 reading on the gaussmeter, but here again the *figures are meaningless*. Performance-wise, no matter how much you shim the magnets, the Indox 3 equipped motor can not hope to keep up with a Versitec-Lenz shimmed motor. The length, area, and volume are less on the Indox and the radius of curvature is not well suited to the 16D's armature diameter, so even if the Indox 3 were fully oriented or not, it would not change the situation much. Just to keep the record straight, I might add that the Indox 3 as we know them are not fully oriented.

At first glance the tests look valid but this is like comparing apples and

oranges. Only if we were to add the Lenz part #101 .015" can-in-a-can shim *plus* a .012" curved shim to each side of the Super Arco's magnets so we had the same air, would the Champion's magnets be competitive with the Versitec-Lenz motor. Only after this shimming would the Arcos turn a 5.02–5.03 lap time using a 7-29 gearing. (Notice that a lower gearing now can be used with the addition of Lenz shim and a .012" added).

There is one big difference that was noted during these tests. The Versitec-Lenz would consistently run cooler than the Lenz-shimmed Arco in a regular Mabuchi case when the lap times were about the same between the two motor combinations. So, here again *figures are misleading*.

The Versitec's volume is greater (.0602 cu. in.) than Champion's Super Arco (.05486 cu. in.) but the Champion's area at .36575 sq. in. is only slightly larger than Versitec's .3650 sq. in. However, this greater area of Champion's can work as a disadvantage, for the increased height with the shorter length circumscribes a greater arc, so the magnets are much closer at the top and bottom at their edges when a narrow air gap is used.

If the Arco was ground back at their edges to match the effective arc circumscribed similar to the newer Mabuchi magnets configuration then the volume differential would suffer even more between the Champion and the Versitec magnets.

So it goes in trying to test motors and their different design factors in order to come up with a "jet" for the next race.

If you *really* want to know which is the strongest magnet on the market today then you'll have to pick the Versitec SS91's because of its Alnico 5, but it won't fit into a can without cutting it down.

TEST #1—VERSITEC-LENZ

Armature—double 29, epoxied and balanced.

Magnets and shim—Versitec, with Lenz shim.

Tires—7/8" Riggins.

Frame—5 oz. scratch-built rod type.
RPM at rear wheels—6,850 maximum at full load

Gearing—7 to 29-Riggins.

Amps—1.97 amps at top rpm under load.

Volts—3.0 draw at top rpm.

Lap time—5.01 and 5.02 on 130 foot track.

Braking distance—7'.

TEST #2—NEW 16D MABUCHI MAGNETS WITH MURA SEMI CAN .008" SHIM.

Armature—same double 29.

Magnets and shim—New Mabuchi 16D, plus Mura .008" shim.

Tires—Same 7/8" Riggins.

Frame—Same 5 oz. frame.

RPM at rear wheels—5160 maximum at full speed.

Gearing—7 to 33—Riggins.

AMPS—2.5 at top rpm under load.
Volts—4 volts draw at top rpm under load.

Lap Time—5.47 sec on same 130' track.

Braking distance—8'6".

TEST #3—CHAMPION 517 CASE AND SUPER ARCO MAGNETS PLUS CHAMPION'S SHIM.

Armature—Same double 29.

Magnets and shim—Super Arco with Champion 517 case and shim.

Tires—Same 7/8" Riggins.

Frame—Same 5 oz. frame.

RPM at rear wheels—6225 rpm maximum at top load.

Gearing—7 to a 31.

Amps—2.2 amps at top rpm under load.

Volts—4 volts drawn at top rpm.

Lap time—5.10 sec. on same 130 foot track.

Braking distance—7'6".

TEST #4—SUPER ARCO MAGNETS IN MABUCHI CASE LENZ SHIM PLUS .012" SHIM.

Armature—Same double 29.

Magnets and shim—Arco with Lenz shim plus .012" each side.

Tires—Same 7/8" Riggins.

Frame—Same 5 oz. rod frame.

RPM at rear wheels—6800 maximum at full load.

Gearing—7 to a 29.

Amps—2.0 amp at top rpm under load.

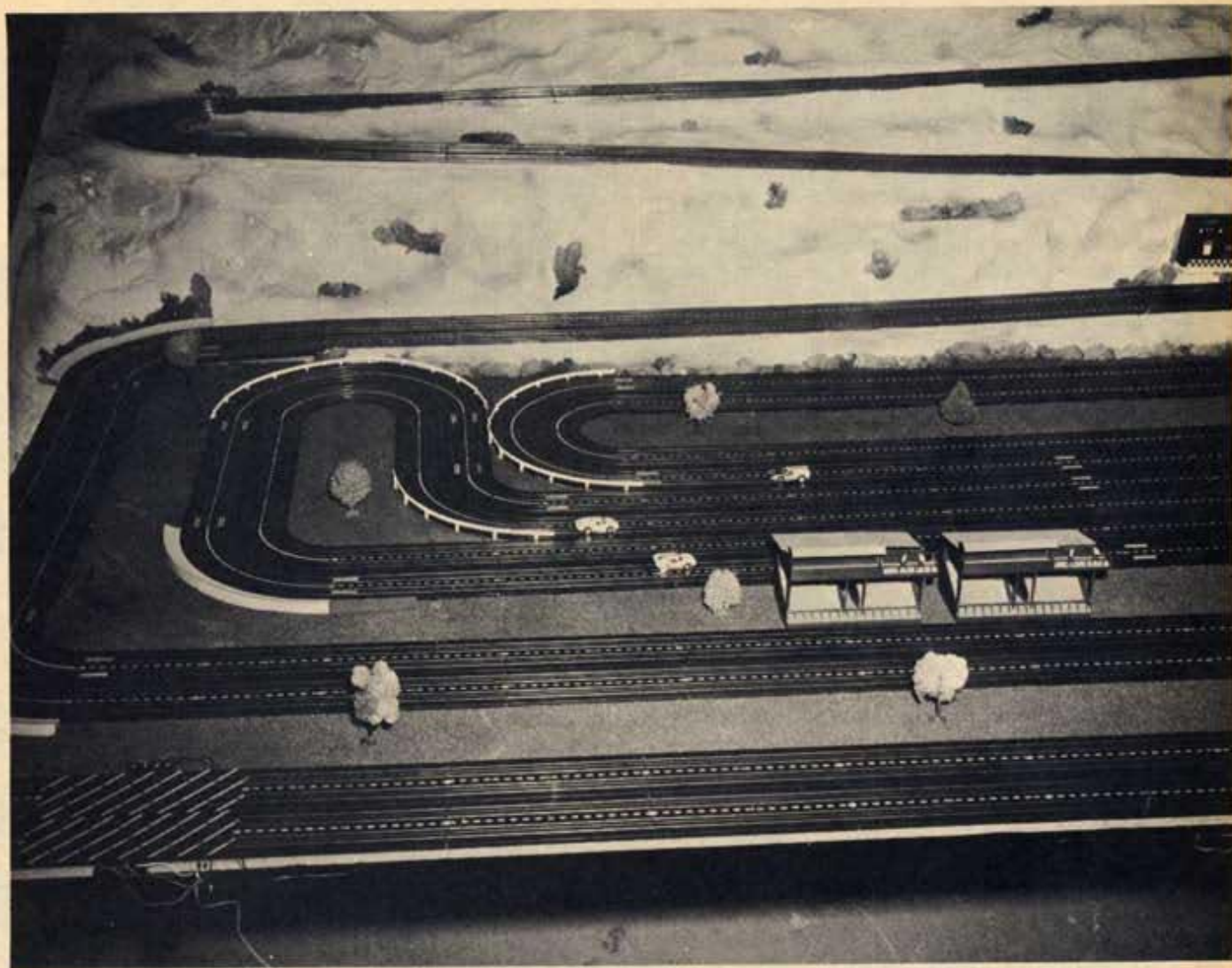
Volts—3.5 volts drawn at top rpm under load.

Lap time—5.02 on same 130 foot track.

Braking distance—6'11".

It must be pointed out that with any tests such as these, the figures will vary slightly with different sets of magnets and the cleanliness of the commutators, length of brushes, etc.

An attempt was made here to keep all factors as constant as humanly possible and in the case of the Arco magnets a particularly strong set was selected. Upon sampling the Versitec seem to be consistent as far as strength goes.



1/87 SCALE FOREVER!

The Air Force goes road racing

Unbanked curves on the lower sections add to the difficulty a driver faces when trying to cut a fast lap. And if you make these, the hill climb is next!

There are wild curves that tests every ounce of driver nerve and skill. There's an intimidating hill coming out of a long straight-away that shakes even the most fearless driver. Le Mans? Monte Carlo? Sebring? No. But if you guessed the HO track at the service club at Chanute Air Force Base, Illinois, you're right! And racing on Chanute's track has proved just as exciting as the real thing.

Though some HO tracks may be longer, few can be more tricky to negotiate. However, the 3½ scale miles of track, on an 8' x 16' layout, makes it one of the longest tracks in America.

The idea of a racing layout was first presented by the Director of Recreation Services and set up by the Tradewinds Service Club at Chanute, where the track is now located.

The original track was a small 3' x 6' layout, obtained when one of Chanute's Chaplains was reassigned and put his home layout up for sale. The service club bought the layout, and it soon became a popular attraction. So popular, in fact, that plans were immediately drawn up for a larger layout.

Though funds were allotted for the bigger track, there was no one with the necessary knowledge and experience immediately available to supervise construction. That problem was overcome when Airman William Sterner reported to the 3355th Student Squadron at Chanute.

Sterner, from Niagara Falls, New York, had been building slot cars for a number of years. He had also been involved in many local racing events, as well as having entered the Aurora Nationals sponsored by the Ford

Motor Company. He undertook the project of designing and supervising construction of the track.

Working with Sterner on the track was Airman First Class Don Mourlam, Special Services Assistant. Mourlam is presently supervisor of slot car activities for the service club.

The track took about two months to complete and was opened for regular use early in January. Already, more than two hundred military personnel and dependents are regular daily users of the track and patronization continues to rise weekly.

The service club maintains a stable of 15 cars which patrons can check out for use on the track a half hour at a time. Racers can also use their own cars if they desire. According to Mourlam a lot more people have been building and using their own cars since the track

opened. There is no charge for racing on the track.

Built at a cost of approximately \$500, Chanute's track is the longest (in scale miles) in the Air Force. It is a three tier structure, with a mountainous background, supported with 1" x 6" planks, with 2" x 4" used to support elevated areas.

Though much detail was given to scenic detail and authenticity, the main objective was to try and get maximum track layout in minimum space, creating a tricky and challenging layout. That the track takes such a long time to master is ample proof that the raceway has achieved initial aims.

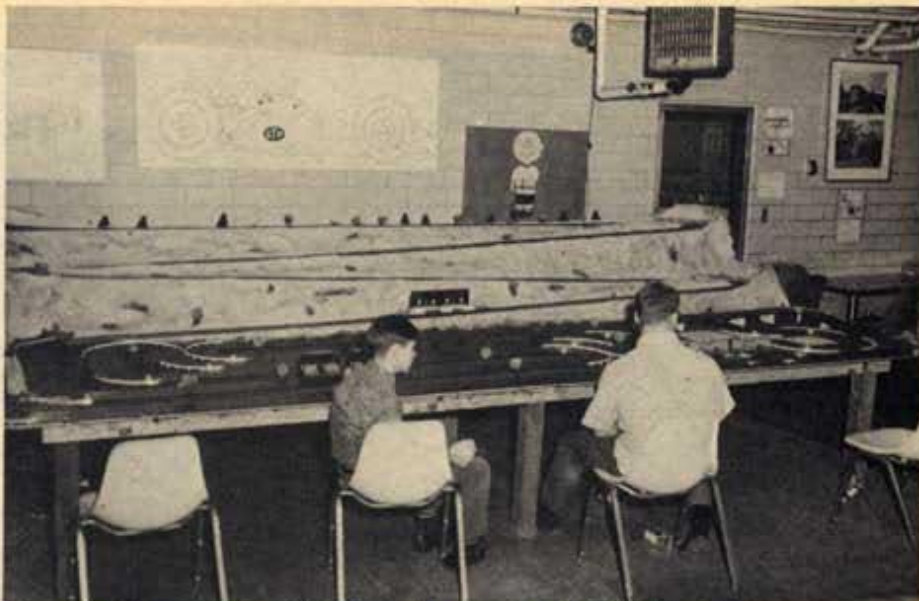
The hill, backdrop for the layout, uses four long straightaways and three hairpin turns to climb a total of 3 feet. A long straight section at the top of the hill joins a short five-foot section of track, compromising a steep grade, that brings the racer back down to a series of loops and circles on the flat bed.

The four lane racing layout has its own automatic lap counters. It accommodates all kinds of racing machines—even a Batmobile!

Record time for the track was set at a recent race by the track's designer Bill Sterner. Running a modified Lola GT, Sterner toured the layout in 26.4 seconds. He also won the feature race, a thirty lap event.

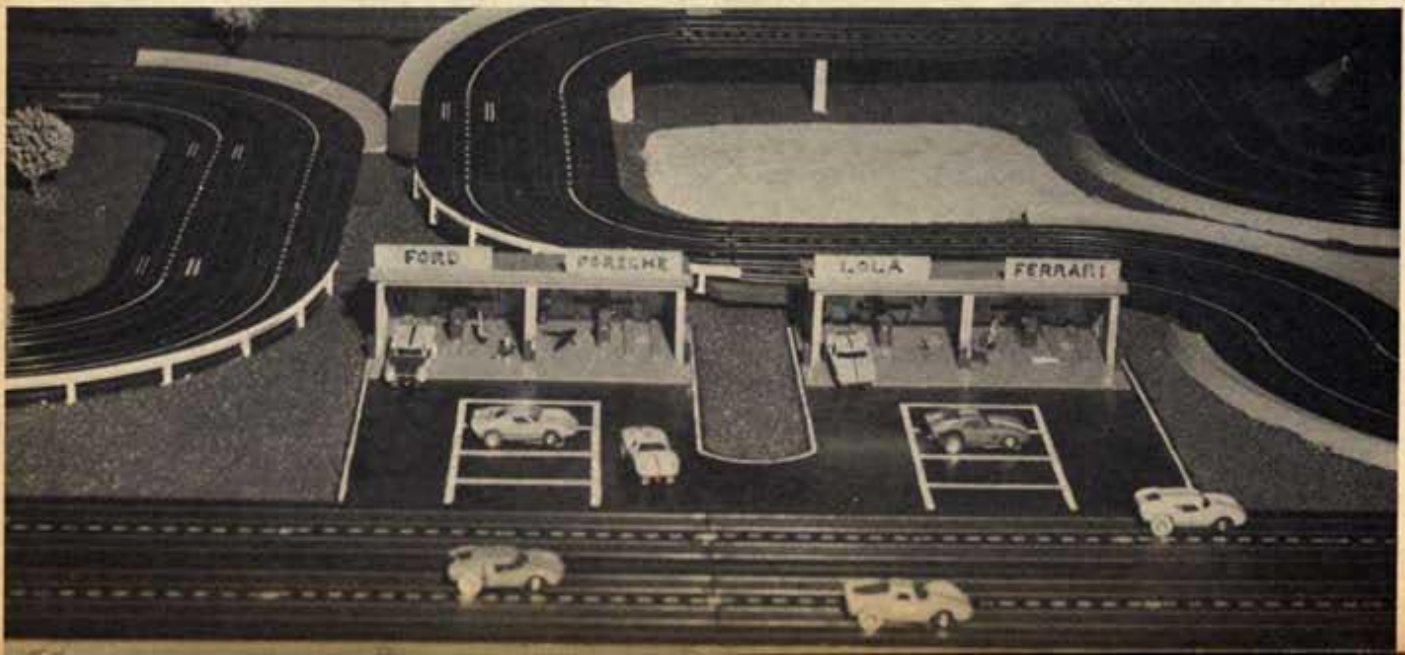
Driving the track is hectic for a novice. It takes a good deal of practice to be able to complete the track in a half-decent time. "It looks like Bill designed this thing during a nightmare," comments one frustrated racer, "and driving it is one."

Yet, regardless of what it is, the HO layout still remains one of the most popular spots at Chanute AFB.



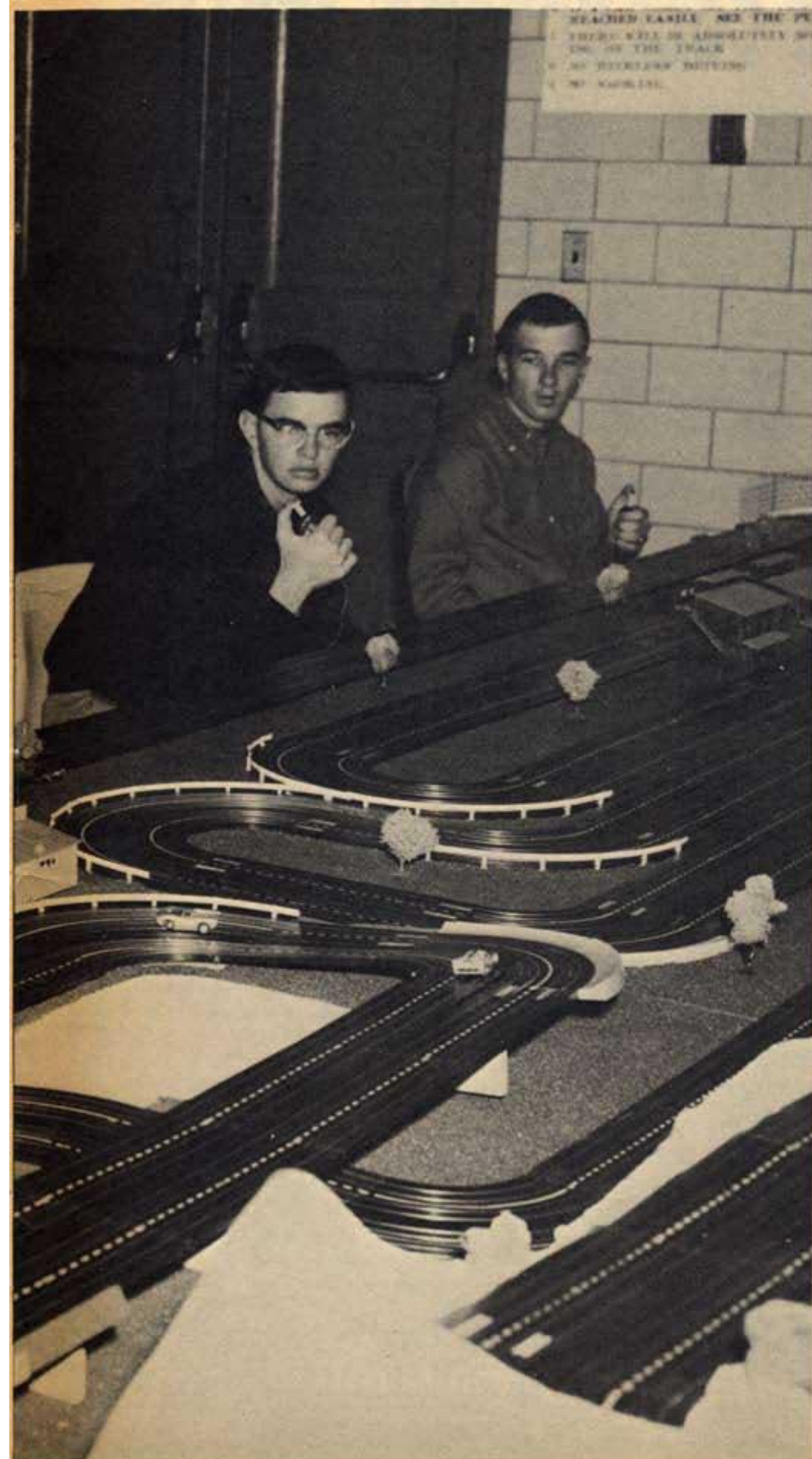
Overall view of Chanute layout shows the track in all its splendor.

The pit area is proof that some love and attention have been expended by the HO buffs at Chanute.



Bill Sterner (left), the track designer, has a "go" with his fellow airmen.





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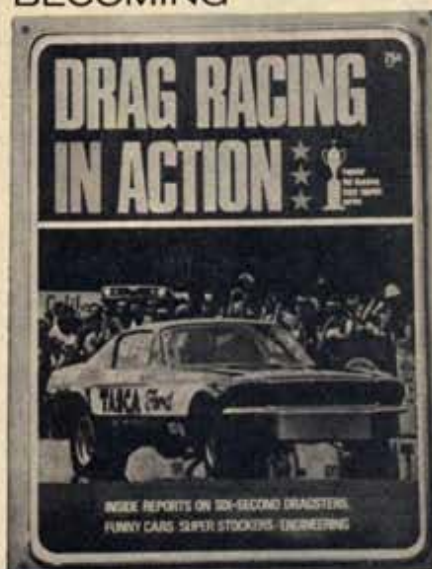
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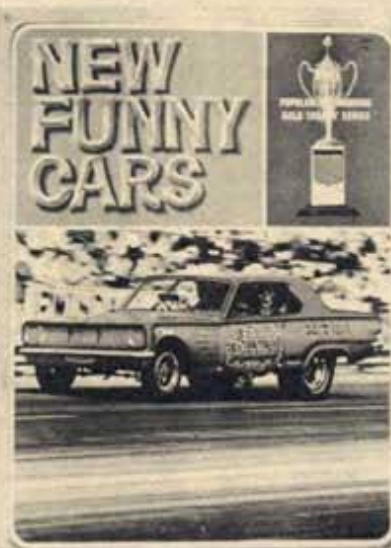
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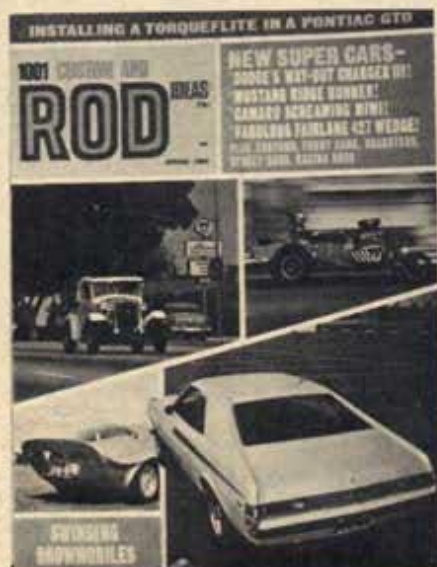
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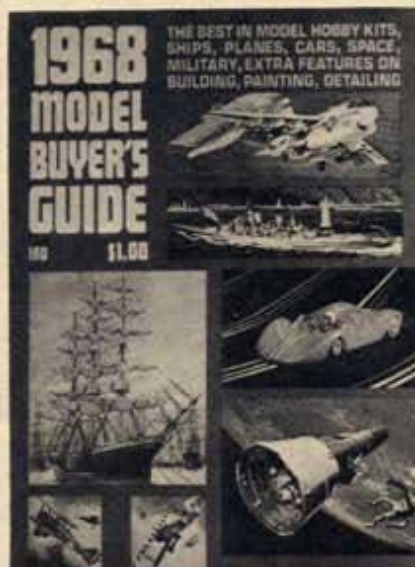
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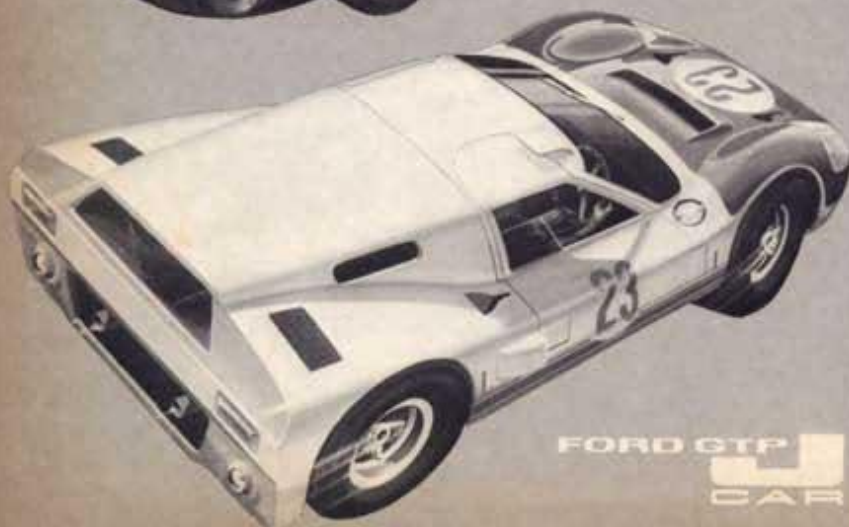
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